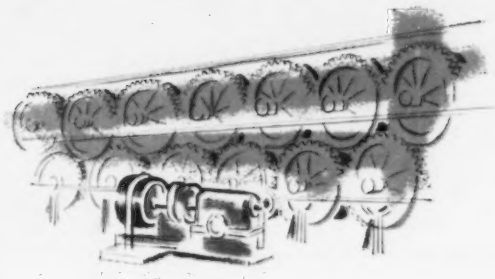
APRIL 13, 1959

# PAPER TRADE JOURNAL

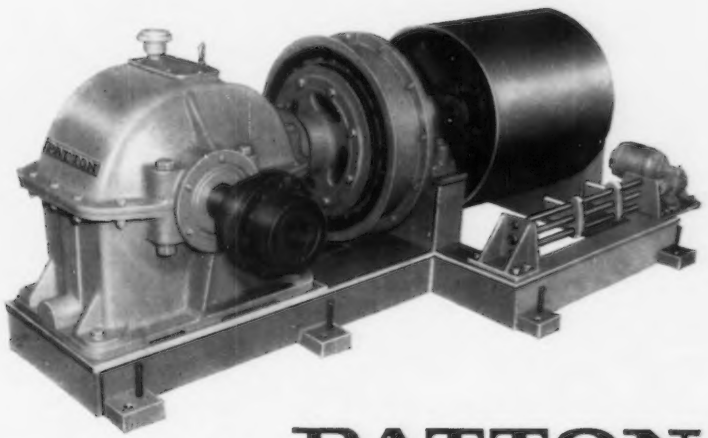
Size Press Application of Conventional Paper Coatings

Wood Waste Utilization Program in the South

Considerations in the Lubrication of Dryer Bearings and Gears

PAPER MACHINE DRIVES




by PATTON

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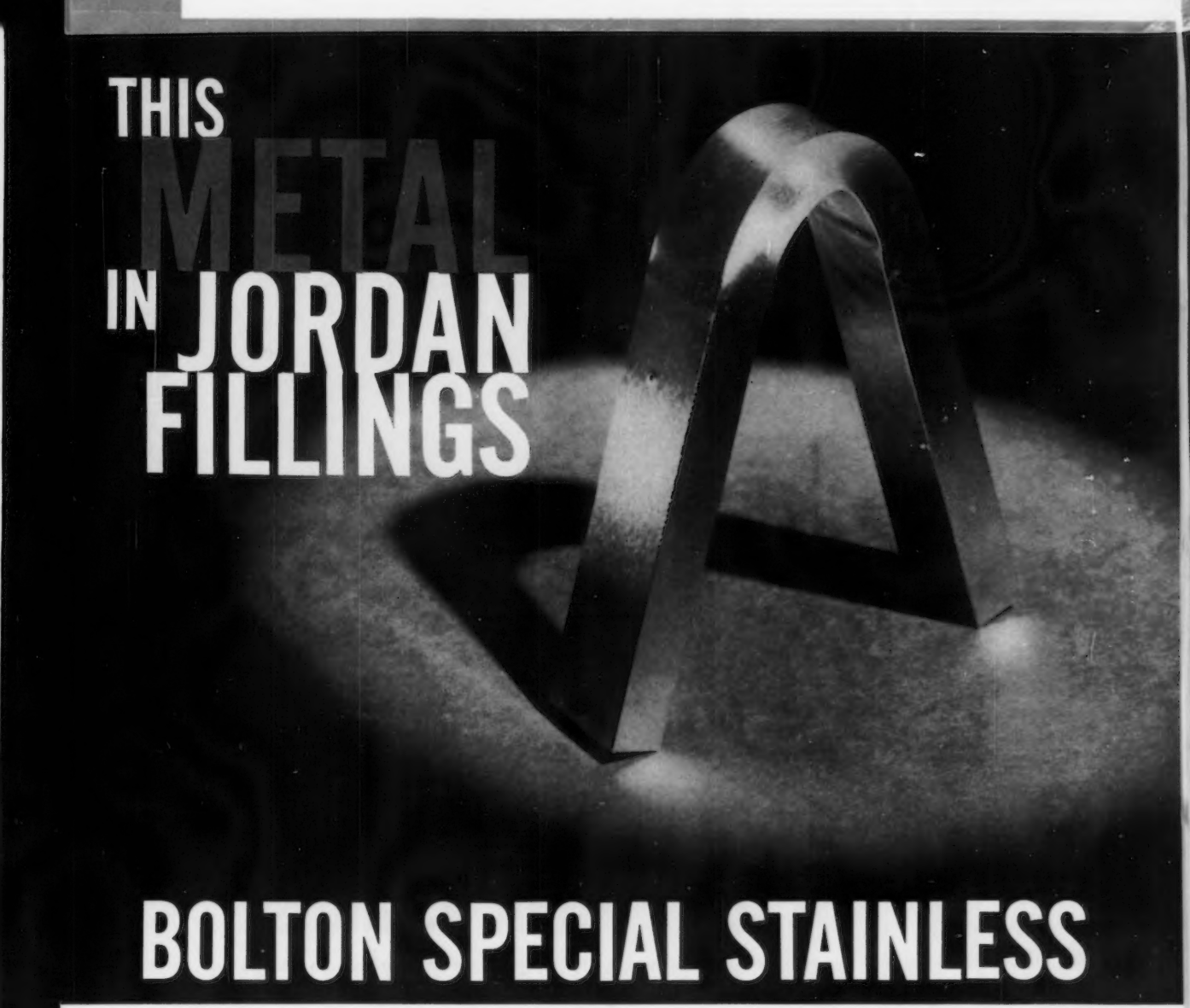
# THIS METAL IN JORDAN FILLINGS



# BOLTON SPECIAL STAINLESS

*. . . means more to papermakers than any steel developed in two decades*

Its unique properties provide: absolute resistance to corrosion from chemicals normally encountered in refining equipment — protection of the cutting edges against wear and abrasion — toughness to withstand deformation without fracture — and the capacity to resist severe shock.

The need for a metal with this combination of mechanical properties has long been felt. Before the first shipments of Bolton Special Stainless were made in 1948, the choice was between wear resistance or corrosion resistance. Now, The Papermaker gets both, in addition to all other necessary properties.

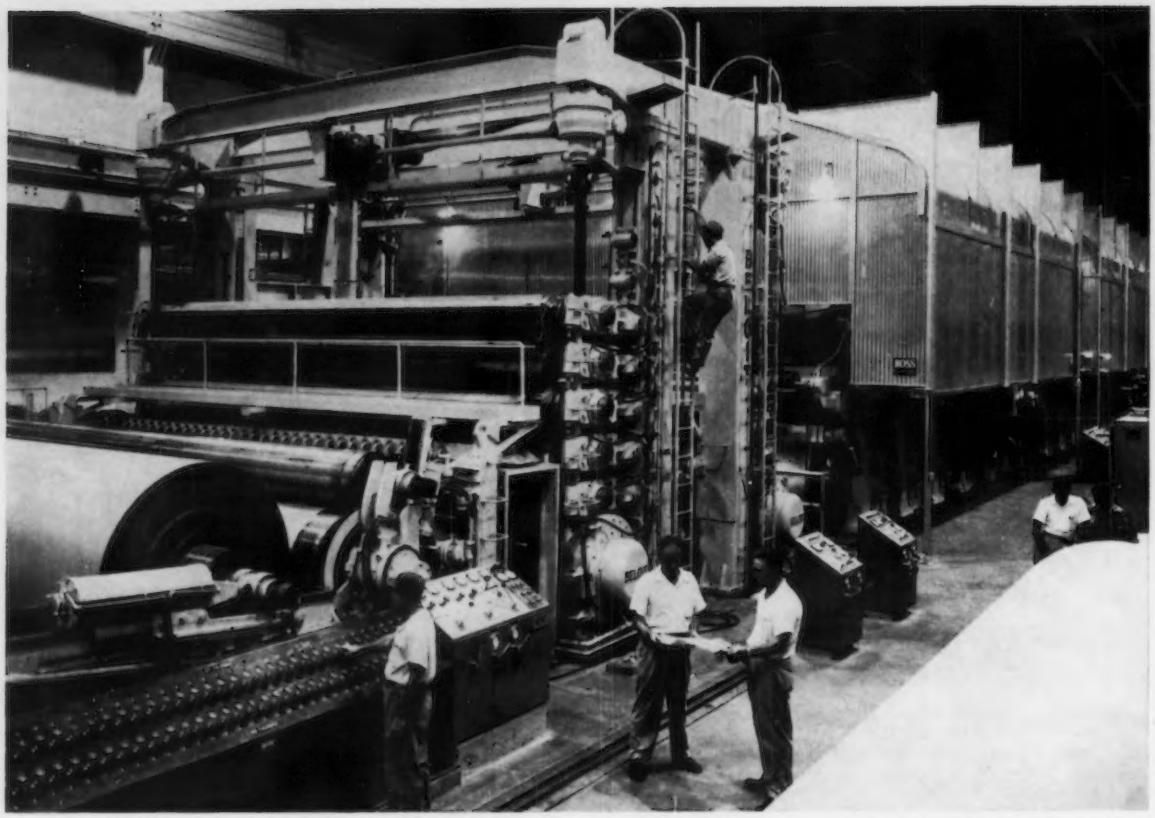
Bolton Special Stainless is a chrome-nickel alloy having a chrome and nickel content approximating that in 300 series Stainless. It has made possible a form of heat-treating never before used commercially on steel for refining equipment. Known as precipitation hardening, this in-plant custom heat-treating gives the finished steel the unique character of being entirely free of stresses. This Bolton heat treatment makes it practicable to control the relationship of mechanical properties of the metal to meet the specialized requirements of paper mill refining operations.

| Brinell Hardness | Tensile Strength (Average Minimum) | % Elongation (2") | % Reduction of Area |
|---|---|---|---|
| 321 | 180,200 | 16.4 | 74.2 |
| 363 | 199,300 | 14.5 | 41.9 |
| 415 | 211,700 | 14.0 | 32.1 |

Various heat treatments for differing mill applications

It has taken years to prove this metal under all operating conditions. Now we have standardized our inventories on Bolton Special Stainless. We are proud to offer this premium quality stainless at no additional cost. Bolton Special Stainless is on hand in quantity to make prompt shipments to the growing number of papermakers *who have compared* — in all patterns, in all makes of Jordans. Don't wait. Try it now. *Call or write John W. Bolton & Sons, Inc., Lawrence, Massachusetts.*

BOLTON EMERSON



**WEST VIRGINIA PULP AND PAPER CO.** uses Texaco Paper Machine Oil HD in the circulating system and Meropa Lubricant #2 in the gear sets of this brand new $25,000,000 Beloit.

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# Texaco lubrication assures longer uninterrupted production

Production lost through unexpected downtime can be a big item on the profit and loss statement. Conversely, every day *added* to the period between scheduled overhauls can add up to significant savings at the end of the year. That's why it's important to choose the best possible lubricants to insure optimum operation—Texaco Paper Machine Oil HD and Texaco Meropa Lubricant.

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**All-around Texaco lubrication** is your best protection for vital gears and bearings. A Texaco Lubrication Engineer will be glad to show you the correct products for your needs. Just call the nearest of the more than 2,000 Texaco Distributing Plants in all States or write:

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# PAPER TRADE JOURNAL

PUBLISHED WEEKLY SINCE 1872

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Published by Lockwood Trade Journal Co., Inc., at 34 North Crystal St., East Stroudsburg, Pa. Second-class postage paid at East Stroudsburg, Pa. Printed in U.S.A. Copyright 1959 by Lockwood Trade Journal Co., Inc. Paper established Feb. 17, 1899, combined with Paper Trade Journal Nov. 16, 1899. Paper established Sept. 21, 1910, combined with Paper Trade Journal February 19, 1926. All rights to the above titles reserved. Also publishers of Lockwood's Annual Directory of the Paper and Allied Trades.

**Week of APRIL 13, 1959—*Vol. 143, No. 15***

TRENDS ..... 23

NEWS OF THE WEEK ..... 25

## FEATURE ARTICLES

Use of Size Press for Application of Conventional Paper Coatings ..... 34

Eastex Cylinder Machine Allows More Flexible Operation ..... 39

A Panorama of the Residue Chip Recovery Program in the South ..... 40

Considerations in the Distribution of Lubricant to Dryer Bearings and Gears ..... 46

Blandin Adds New Trailing Knife Coater and Chemi-Mechanical Pulp Mill ..... 50

PAPER PEOPLE ..... 28

NEWS OF CONVERTERS 32

NEW LITERATURE .... 49

NEWS OF SUPPLIERS .. 52

NEW EQUIPMENT AND SUPPLIES .... 56

FIGURES OF THE WEEK 62

PRICES OF FIBERS .... 64

CLASSIFIED ADVERTISING 68

ADVERTISERS INDEX .. 72

## REMEMBER THESE DATES

**May 25-27, Tenth Coating Conference, Statler Hotel, Boston, Mass.**

**June 2-4, American Pulp and Paper Mill Superintendent's Ass'n., National Meeting at the Shamrock Hilton Hotel, Houston, Texas.**

**June 17-20, Summer Meeting, Technical Section, C.P.P.A., Manoir Richelieu, Murray Bay, Que., Canada.**

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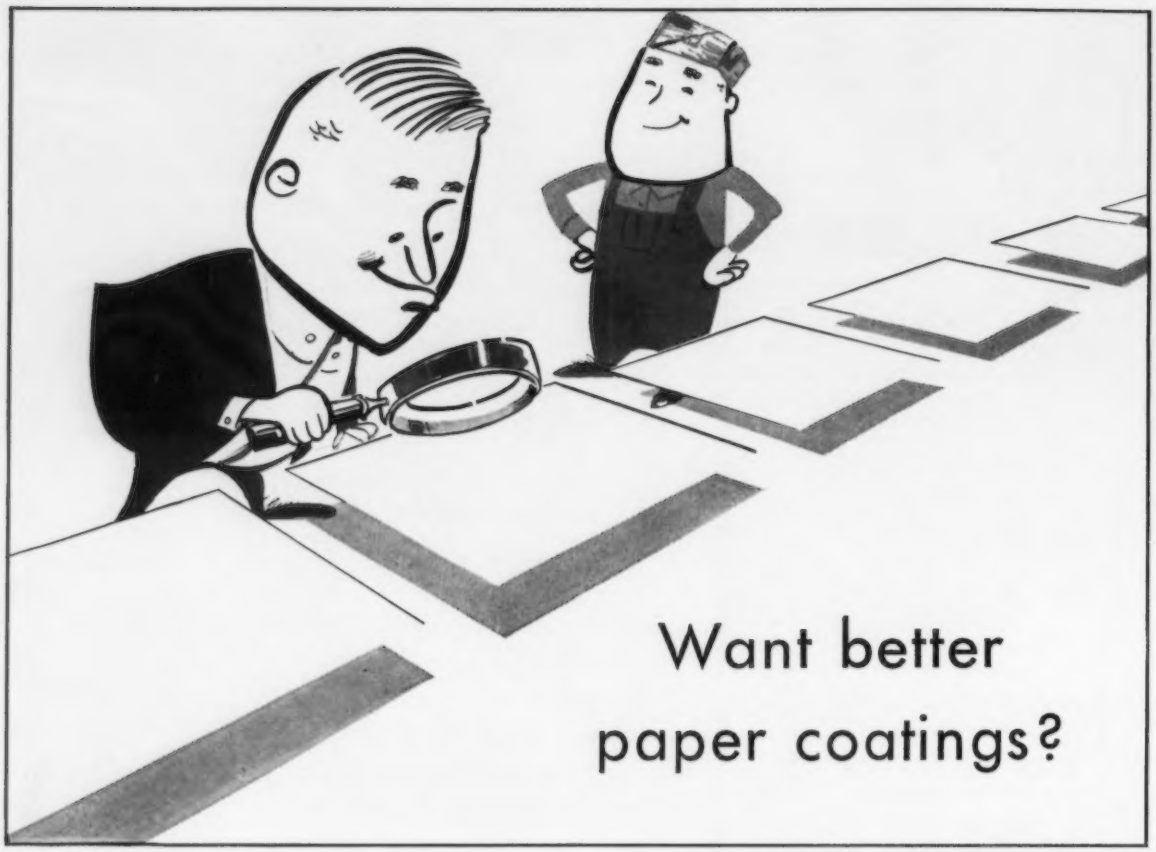


# Sample new PURECAL*O

**—Wyandotte's *refined* grade of pure calcium carbonate**

Get set to profit with better coated stock at competitive prices. Just use Wyandotte's new *Purecal O!*

Precipitated by an exclusive Wyandotte process, new *Purecal O* is the purest of calcium carbonates. Free from discoloring impurities, *Purecal O* is unmatched among coating pigments for whiteness and brightness over the entire range of visible light.

So, contaminant-free *Purecal O* never gives coated papers that "off-white" cast . . . never muddies the sparkle of colors. And *Purecal O* carries no trace of abrasive grit to wear down printing plates before their time; cause expense and delay.

Better check into the advantages of *Purecal O* for yourself . . . for complete technical data and samples to evaluate in your own laboratory, write today: *Wyandotte Chemicals Corporation, Technical Inquiry Section, Wyandotte, Mich. Offices in principal cities.*

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Controlled precipitation insures the same purity and shape and particle size of every pound of new aggregate-free *Purecal O.*

### A HIGHER FINISHING $CaCO_3$

Its particle size and freedom from agglomeration give *Purecal O* finer finishing properties vital to high-quality coated stock.

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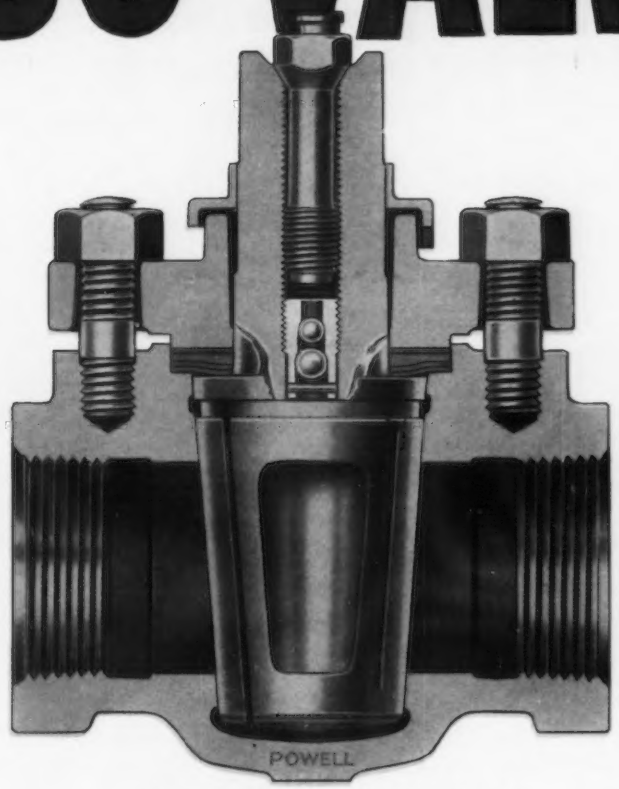
**PACING PROGRESS WITH CREATIVE CHEMISTRY**

# POWELL
# LUBRICATED PLUG VALVES




Sectional-Powell Lubricated Plug Valves, Single Gland type. Also available with Flanged Ends.

Powell Lubricated Plug Valves have many advantages over conventional types of Valves:

- Simple design: only 3 basic parts—body, bonnet, plug.
- Quick, complete shut-off.
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- Cavity-free straight passage assures streamlined flow.

Available in sizes ½", through 16", depending on the type required—semi-steel 175 and 200 pounds WOG; carbon-steel ASA 150 and 300 pounds. Also in other alloys on special order.

For complete information, write for our new Lubricated Plug Valve Catalog, Number PV-5. Or contact your local Powell Distributor.

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*Dependable Valves Since 1846*

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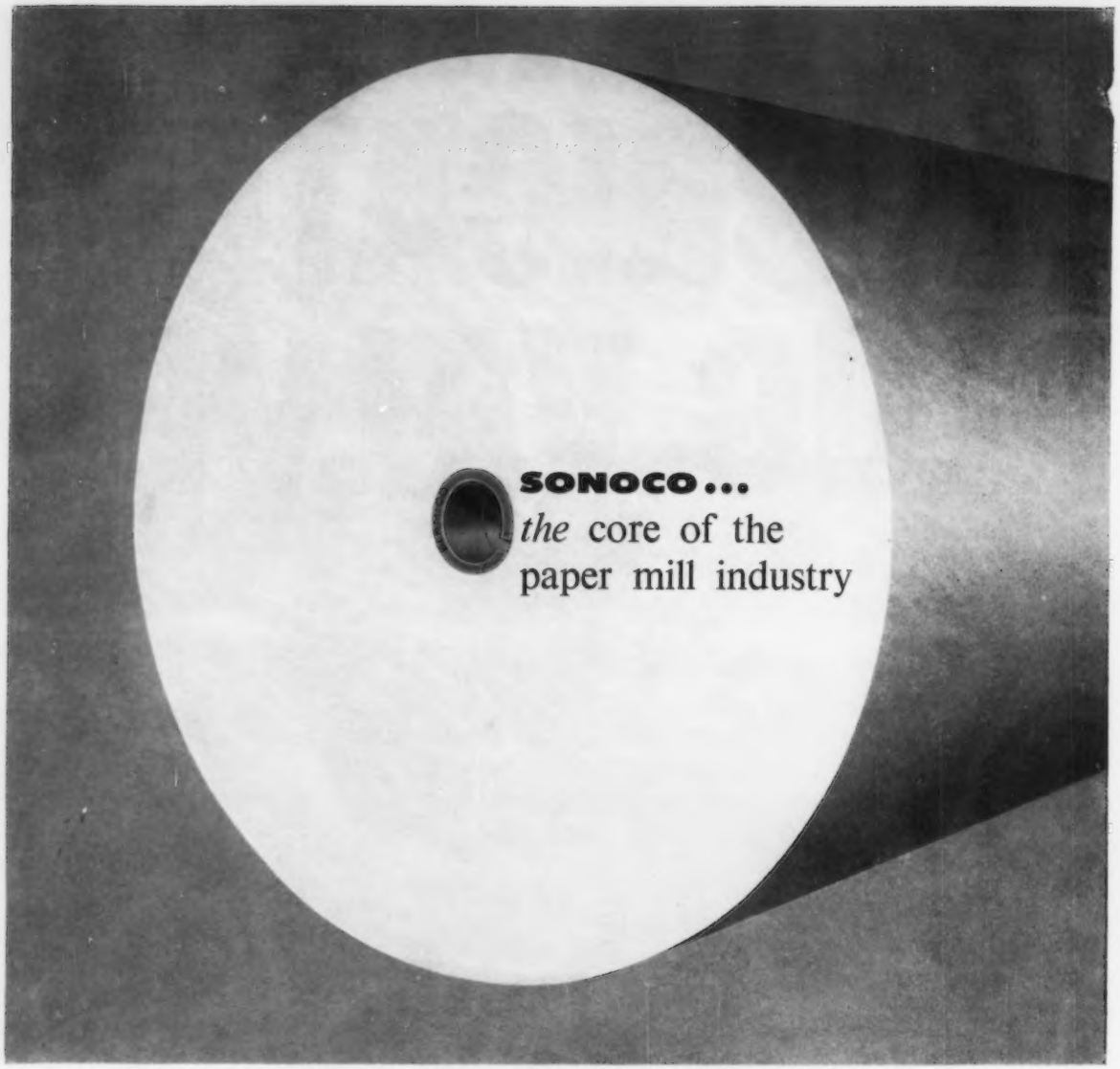


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1404

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Suction couch roll—36″ x 156″.

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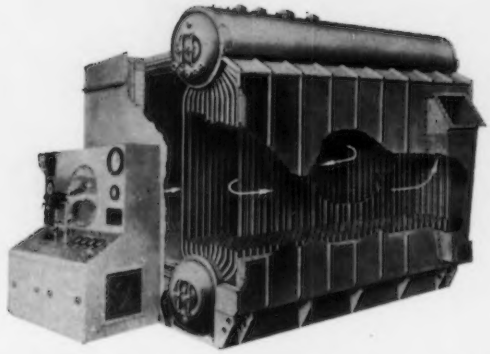
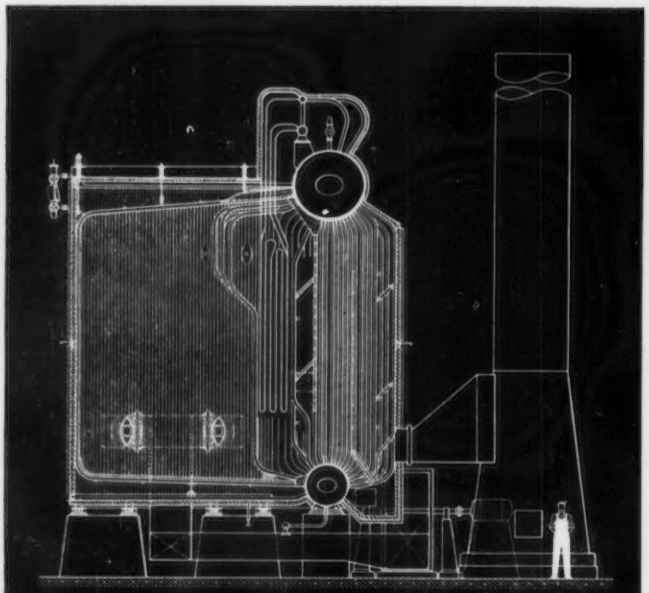
# C-E Power Boilers for the Pulp and Paper Industry



C-E Package Boiler, Type VP—Completely shop-assembled . . . available in 14 sizes from 4,000 to 50,000 lb of steam per hr capacity...pressures to 500 psi...available with integral console control panel. This unit contains more water-cooled area per cubic foot of furnace volume than any other boiler of its size and type. For oil or gas firing.



C-E Vertical-Unit Boiler, Type VU-55 — Available in five sizes . . . capacities from 50,000 to 120,000 lb of steam per hr . . . designed for three pressure ranges: 250, 500 and 700 psi, and total steam temperatures up to 750F. Equipped with tangential burners, 60-inch steam drum assures generous water capacity and steam reservoir space. Tangent tube waterwalls offer complete furnace protection, minimizing maintenance. For oil or gas firing. Available with heat recovery equipment, if desired.

C-E offers boiler designs for any pressure, temperature and capacity . . . for any fuel or combination of fuels. The units illustrated here include both standard and custom designs with capacities from 4,000 to 750,000 lb of steam per hr, with pressures to 1350 psi and steam temperatures to 950F. Two units are for oil or gas firing. The other four are available for coal, oil, gas or bark firing—either singly or in any desired combination. In addition to those illustrated, there are other designs available for more specialized applications.

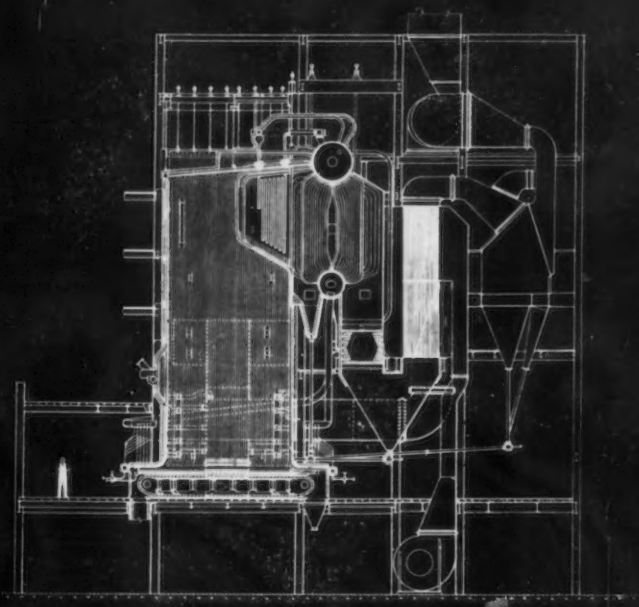
Whether you wish to add steam capacity to your present power plant — or build a single large boiler to meet all your steam needs — these units allow you a freedom of choice never before available. In addition to making full utilization of your bark supply, you can choose a supplemental purchased fuel best suited to the economics of your area for use when your bark supply is inadequate or your steam needs exceptional.

All these boilers have been proved in operation. They perform reliably and economically and — no matter what your combination of fuels or steam conditions — are designed to meet your needs exactly.

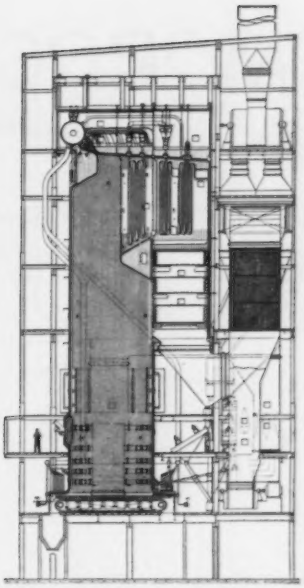
For further information, contact the C-E office nearest you. Or, if you prefer, write or phone the C-E Paper Mill Division in New York.

C-198

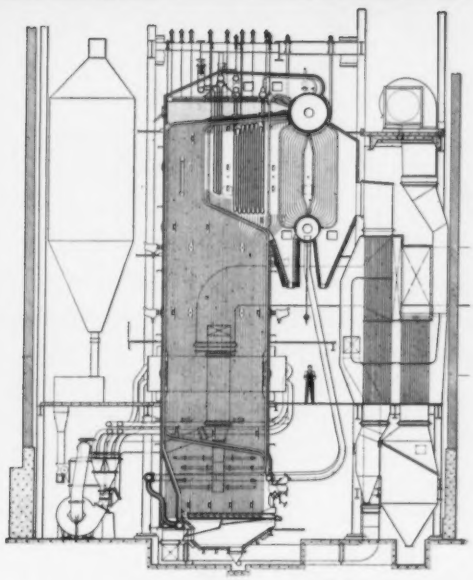
**These drawings show but a few of the many types of C-E boilers available for pulp and paper mill use which burn two or more fuels. Not illustrated here is the C-E Chemical Recovery Unit.**



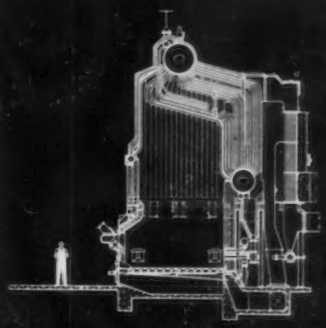
C-E Vertical-Unit Boiler, Type VU-40 — fired by C-E Tilting Tangential Burners and a C-E Continuous Discharge High Set Spreader Stoker. This unit is designed to burn natural gas, oil, coal and bark . . . a baffleless boiler with capacities ranging to about 300,000 lb of steam per hr with pressures to 1350 psi; temperatures to 950F.



C-E Radiant Type Boiler — Type RX — for bark, oil, natural gas, stoker or pulverized coal firing in any combination. Available in capacities to 750,000 lb of steam per hr, with pressures to 1350 psi and temperatures to 950F. The unit pictured is fired with a C-E Continuous Discharge High Set Spreader Stoker and C-E Tilting Tangential Burners.



C-E Vertical-Unit Boiler, Type VU-40 — for capacities to about 300,000 lb of steam per hr, pressures to 1350 psi and temperatures to 950F. For pulverized coal and bark firing, singly or in any combination. The unit illustrated is equipped with C-E Bowl Mills, C-E Tilting Tangential Burners and a C-E Dump Grate Spreader Stoker.



C-E Vertical-Unit Boiler, Type VU-10—fired by a bark and coal burning C-E Spreader Stoker. VU-10 Boilers are available for capacities to 50,000 lb of steam an hr, with pressures to 500 psi and temperatures to 650F. This unit type is available for coal, oil, gas or bark firing — singly or in combination.

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3. FOLLOW THE ARROWS—SEE HOW THE FLAKES FLOW DOWN THE ROTOR FACE AND IMPINGE AT A RIGHT ANGLE AGAINST THE ATTRITIONING RING WHERE THE TWO SETS OF BARS RUB THE FLAKES APART INTO INDIVIDUAL FIBERS——→

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This is a startling fact that calls for careful heeding by every businessman.

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This same net on a $100,000 order is yours every time you save $6,400 in processing or manufacturing costs.

A re-evaluation of your soda ash purchases may reveal appreciable savings.

Here are a few factors to consider:

(1) Columbia-Southern may develop, through a study of your operations, potential savings in your converting from bag to bulk purchases.

(2) Savings also may become apparent in a study of Columbia-Southern's three Soda Ash plant locations, selected for maximum delivery efforts.

(3) Further possibilities may exist through the kind of help Columbia-Southern can give you in specialized technical assistance and in recommendations for profitable handling and storage procedures.

If you haven't carefully appraised your soda ash purchases within the past few years, we suggest that you call today at any of the fourteen Columbia-Southern District Sales Offices for prompt and helpful information.

*Based on Manufacturing Corporation Statistics for first half of 1958.

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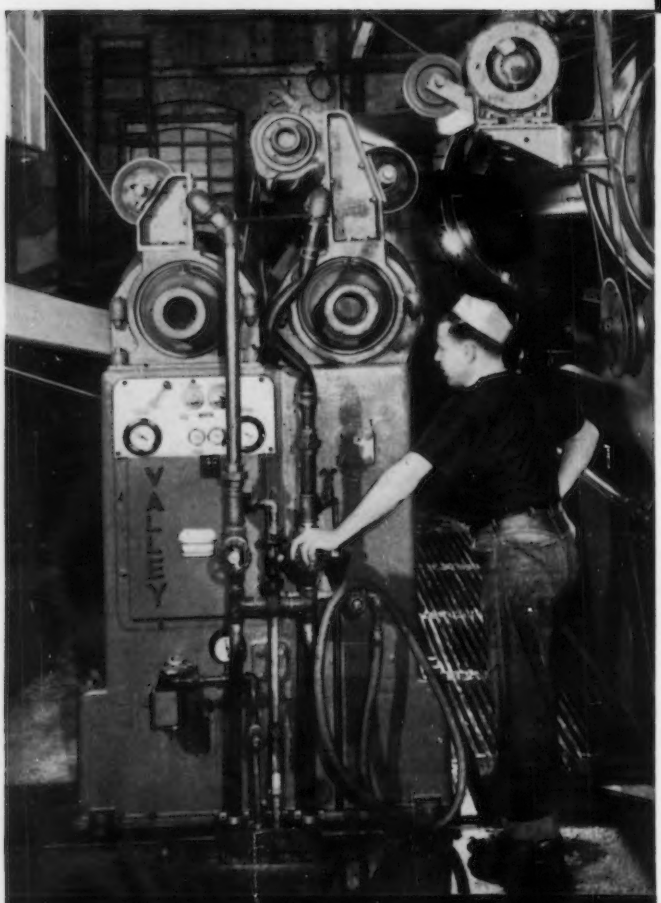
*you should know about the*

# HORIZONTAL SIZE PRESS *by....* VALLEY

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Eye level operation. All visible.

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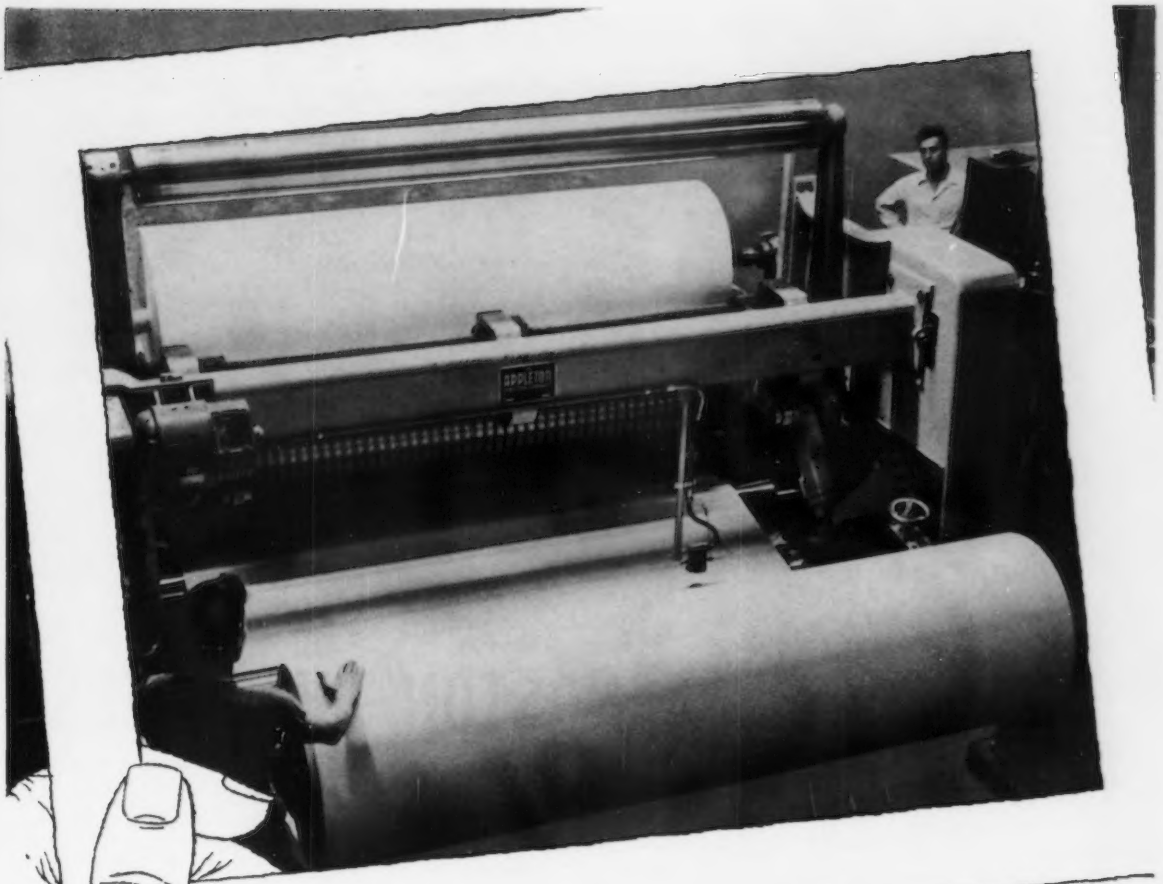


# *any way you look at it*

**(and this is from the back)**

# *an Appleton Winder makes sense!*

Makes friends, too: past purchasers of Appleton Winders account for 75% of present sales.

*Here's probably why:*

Above view displays with a clarity that can't be missed the clean uncluttered design for fast, simple threading and easy accessibility that can't be matched.

Requires less floor space and overhead than any other winder of like capacity. Note low silhouette.

The precision and reliability that stems from 75 successful years of paper machine engineering.

Complete push-button control that *delivers* man-and-a-half operating economy and efficiency.

*There's a fully descriptive brochure on Appleton Winders that's yours for the asking. Also, details of our lease-purchase plan will be sent upon request.*

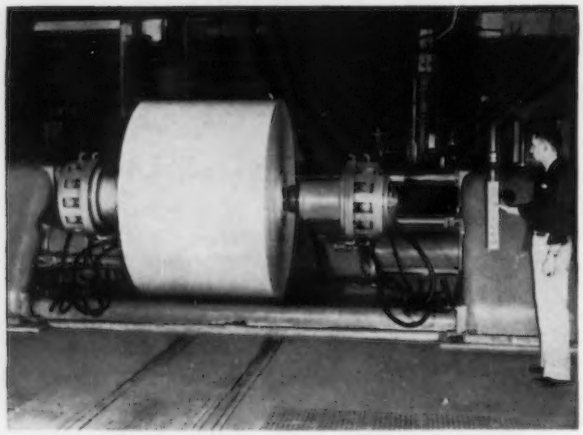
**APPLETON MACHINE COMPANY**

APPLETON, WISCONSIN

**Ready for the roll.** Notice the absence of a shaft. Roll is moved in between lifting arms which close under pressure and elevate to desired height.

# LANGSTON SHAFTLESS UNWIND STAND

## Boost your production . . . reduce your slitting and rewinding costs



**Easy, fast, completely safe.** One man does everything. Operating push-button controls, he closes lifting arms, elevates roll, sets brakes.

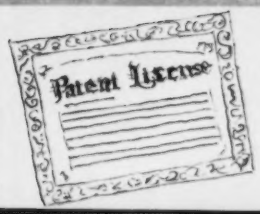
One man can load the heaviest roll. No heavy shaft to handle. No cone tightening. No couplings to engage. No crane lifting. Just pushbuttons. This is the Langston heavy duty shaftless unwind stand for rewinding and converting applications.

You not only save time, you also get better unwinding. Roll can be positioned laterally by push-button control—even when the machine is running. It's held firmly under pressure for complete safety throughout the unwind. Several braking arrangements can be provided to handle a wide range of grades and conditions. Available extras provide for handling very narrow rolls; for constant tensioning; for automatic braking of idler rolls; for automatic web alignment and side register control; for web oscillation; and for local or remote control.

This new Langston shaftless unwind stand can be used with any make of slitter. Available for maximum roll widths from 40 to 132 in. and diameters from 14 to 84 in. Speeds to 3000 fpm and higher. For complete information, write Samuel M. Langston Co., Camden 4, N. J.

**LANGSTON** *Leadership...by design*

# Which of these 3 products and services can you use from BECCO?




## "Enclosing $1.00 — Send Patent License"

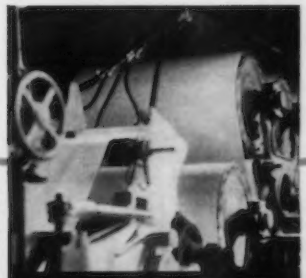
Well, perhaps there's a little more to your gaining use of Becco patents than just mailing your dollar in, but not much more. And certainly, no more money. The $1.00 really does cover it.

Becco has lots of patents, granted as a result of innovations in the use of Hydrogen Peroxide and other Peroxygen chemicals developed in Becco's Research Laboratories. But they don't do us a whole lot of good locked tightly in our safe. So, we long ago adopted the following policy:

If one of our patents can help you, we'll be glad to license the rights to you **perpetually,** for just one dollar. You get a nice certificate, incidentally, to cover the legalities, but more important – you also get free our complete engineering help in setting up your process, handling the material, maintenance, etc., etc.

What do **we** get? You as a **customer** – we hope – but there's no obligation on your part. Just seems to work out that way, though – when we know enough about a particular peroxygen to hold a patent on its use, chances are we've also learned enough to produce it purer than anyone else. You benefit from this; we do, too.

Use the coupon below to ask for a Sales Engineer – or our list of patents – that may help you solve an important problem.



## How BRIGHT Is BRIGHT?

That's a hard question to answer. It depends on how the pulp is treated.

Trouble is, paper can show an 86 level at the layboy, but by the time the paper is delivered, this has dropped to 82 or lower. With conventional bleaching methods, that is.

Many chemical pulp producers have found the answer to this problem in Becco's Dryer Steep Bleaching Process (patented, but licensed perpetually for one buck). Applied by means of spray pipes across the pulp sheet ahead of the dryers, Becco Hydrogen Peroxide increases brightness permanence and bleaches in transit. Often, in fact, an 86 layboy level **improves** to 88 by delivery time.

This is just one example. Becco has a vast amount of technical knowledge compiled from 31 years of experience with **all** types of pulp. If **you'd** like help with your pulp, free of any obligation, let us know with the coupon below.

## Problems in handling Hydrogen Peroxide

?

Becco's Four-Fold Engineering Service Program—offered free—includes:

1. Comprehensive survey of your facilities.
2. Specific proposal with recommendation of proved equipment and where it is obtainable.
3. Installation supervision by Becco.
4. Periodic inspection and permanent service.

Can you use this free Becco help, based on more years of experience with bulk handling of $H_2O_2$ than any other manufacturer? Use the coupon to let us know.

**BECCO** fmc

**BECCO CHEMICAL DIVISION, FMC**
**Station B, Buffalo, New York**

**Dept. PTJ-F**

Gentlemen:

Please send your list of patents available on the use of

- ☐ Hydrogen Peroxide
- ☐ Peroxygen Chemicals
- ☐ Persulfate Chemicals

☐ Please have a Sales Engineer call.

NAME_____

FIRM_____

ADDRESS_____

CITY_____

ZONE____ STATE_____

**BECCO** fmc

**BECCO CHEMICAL DIVISION, FMC**
**Station B, Buffalo, New York**

**Dept. PTJ-C**

Gentlemen:

We **would** like help with our pulp. Please have a Becco Sales Engineer call.

NAME_____

FIRM_____

ADDRESS_____

CITY_____

ZONE____ STATE_____

**BECCO** fmc

**BECCO CHEMICAL DIVISION, FMC**
**Station B, Buffalo, New York**

**Dept. PTJ-B**

Gentlemen:

Please tell me more about your Four-Fold Engineering Service.

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FIRM_____

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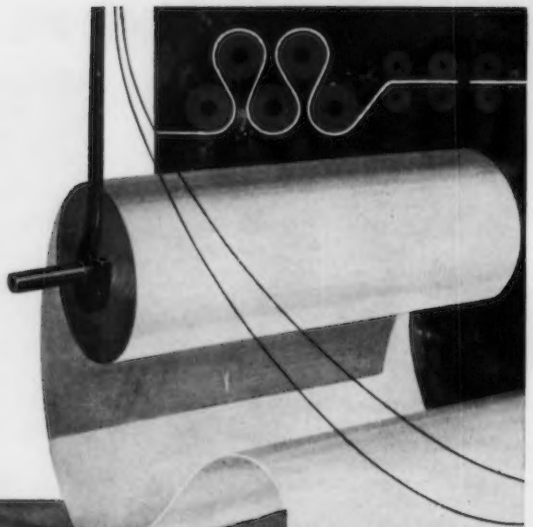
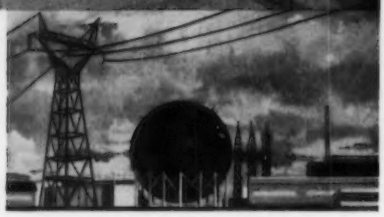
# Now! Trona®
# SODIUM CHLORATE
*from Aberdeen, Mississippi*





## expanded capacity for growing markets by the *largest* domestic producer of $NaClO_3$

The big news in sodium chlorate is TRONA's new electrochemical plant, now on stream at Aberdeen, Mississippi. This latest AP&CC facility provides faster and better service to the South's growing pulp and paper production centers, as well as further assurance of dependable sodium chlorate supply for other important markets in such fields as agriculture, uranium ore processing and solid propellant fuels. Aberdeen's readily expandable, initial capacity of 15,000 tons per year, added to the $NaClO_3$ production capability of Trona's Henderson, Nevada, plant makes American Potash & Chemical Corporation the largest domestic supplier of sodium chlorate...capable of meeting *all demands* from expanding commercial and military users. *Further information on Trona's sodium chlorate service and production capabilities at Aberdeen is available from your nearest AP&CC branch office.*

TRONA

**American Potash & Chemical Corporation**

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99 PARK AVENUE, NEW YORK 16, NEW YORK
OFFICES: LOS ANGELES, NEW YORK, CHICAGO, SAN FRANCISCO, PORTLAND (ORE.), ATLANTA, COLUMBUS (O.), SHREVEPORT

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THORIUM • CERIUM • RARE EARTHS • *and other diversified chemicals for Industry and Agriculture*

**YOUR LONG-AWAITED "ENCYCLOPEDIA" OF FELT APPLICATION**

# FIRST
## COMPLETE FELT HANDBOOK IN HISTORY!

Albany Felt Company proudly announces the publication of a new 80-page technical handbook, "Improved Felt Performance", the most complete reference book on felts and felt applications ever written.

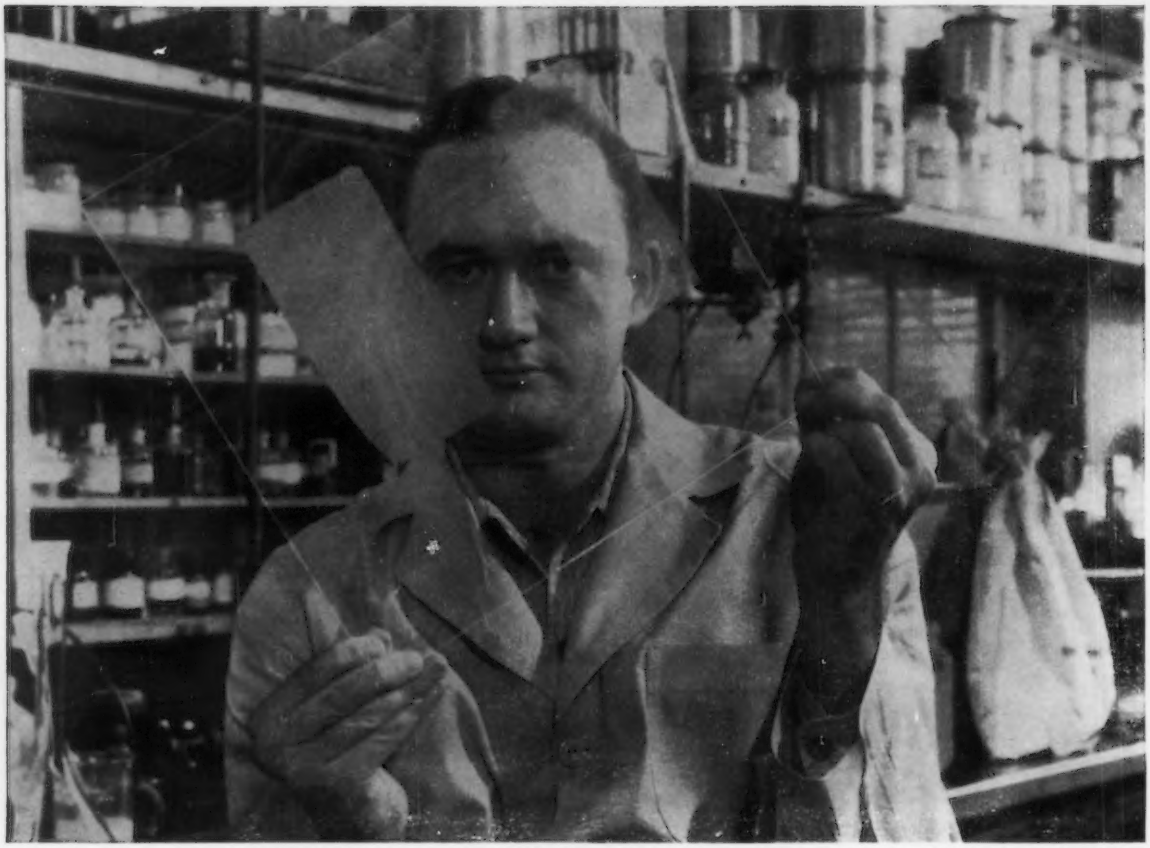
Three years of research, travel, technical discussions, photography, illustration and writing have gone into the preparation of this new handbook. Beautifully illustrated with color photography and technical drawings, it gives you up-to-the-minute information on synthetics and chemical treatments, correct installation and operation, felt-cleaning problems, and many other vital factors in successful paper and paperboard production.

"Improved Felt Performance" is intended for use as a technical aid to mill managers, superintendents and machine personnel, and should prove helpful as a training program textbook. It supplements our original "Suggestions For Improved Felt Performance" (1955) as the industry's standard guide to profitable paper machine felt operation.

Ask your Albany Felt Sales Engineer for your free copy or write directly to us. You will be glad to have this useful technical manual.

**ALBANY FELT COMPANY**
MAIN OFFICE & PLANT: ALBANY, N.Y.
OTHER PLANTS: HOOSICK FALLS, N.Y., N. MONMOUTH, ME., ST. STEPHEN, S.C.; COWANSVILLE, P.Q.

NEW IDEAS FOR BETTER PAPERMAKING—FROM THE WORLD'S LARGEST MANUFACTURER OF PAPER MACHINE FELTS



Smears of size on glass show clarity of Ten-O-Film, right, almost invisible, compared with conventional starch, left.

# Sure way to CLEAR, UNIFORM COATING

The highest degree of coating quality can be achieved with the new, improved Ten-O-Film starches.

These new starches possess unexcelled clarity, uniformity and film-forming properties. They are available in a series of fluidities to meet your exact requirements. Because of their high degree of viscosity stability at high solids, Ten-O-Film starches reduce setback and maintain adhesive strength, assure good performance. At lower concentrations Ten-O-Film starches assure superb structural film continuity and excellent results.

For technical assistance in selecting the TEN-O-FILM starch best suited to your needs contact our nearest sales office or write direct.

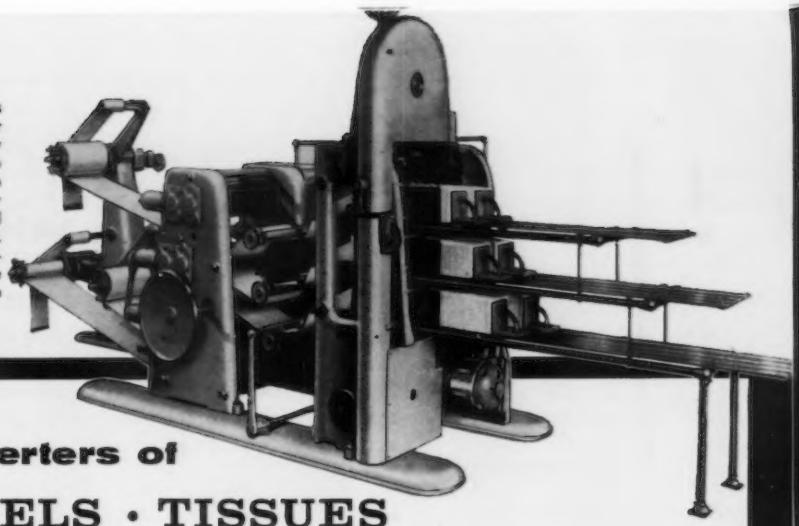
## TEN-O-FILM® starches

*Fine products for the Paper Industry: EAGLE® • FOXHEAD® • GLOBE® • TEN-O-FILM® and CLARO® starches. GLOBE® dextrines and gums.*

CORN PRODUCTS SALES COMPANY 17 BATTERY PLACE, NEW YORK 4, N.Y.

### A NAPKIN FOLDER WITH TRIPLE EMBOSSER

Pacemaker for the industry, this machine produces regular or facial quality napkins (and other paper or cellulose products) of all standard sizes in perfectly folded squares. Rotary in operation, it handles one to four parent rolls simultaneously and produces up to 2400 completed printed and embossed napkins per minute! Multi-color oil or flexographic ink printing and embossing units can be furnished or added as required. Heavy duty construction, high production speed, dependability, low original cost plus low maintenance expense makes this machine the most popular napkin producer in the industry.



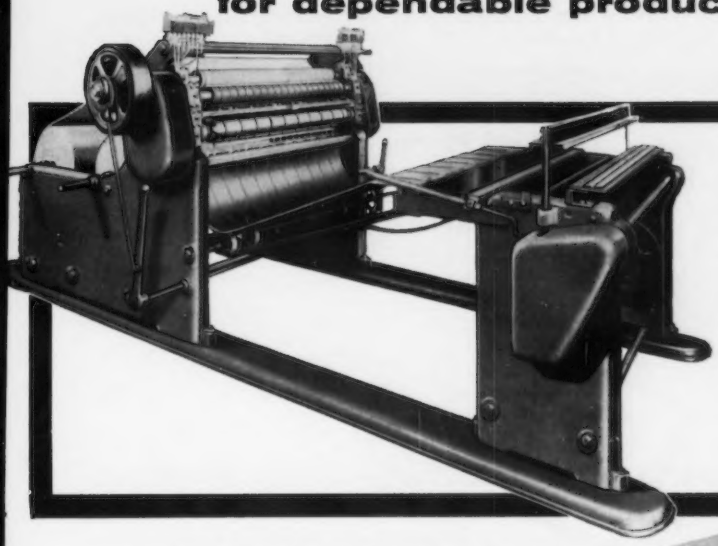
## Leading converters of

# NAPKINS · TOWELS · TISSUES

## rely on these

# HUDSON-SHARP "workhorses"

## for dependable production capacity

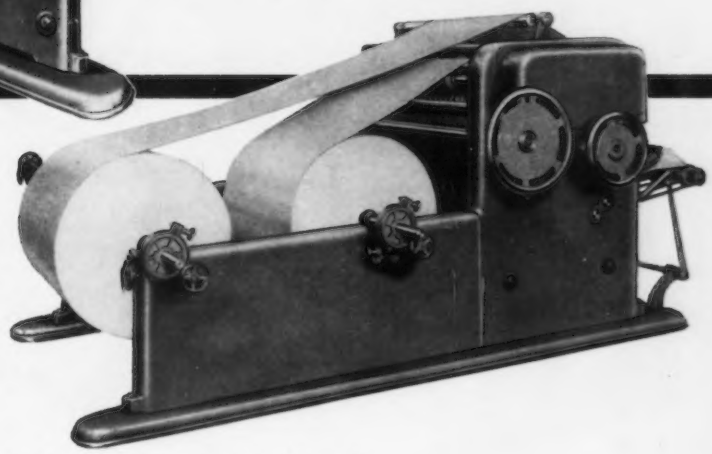


### ROTARY TISSUE INTERFOLDER

Production of single or double-ply interfolded toilet tissues in single or multiple folds reaches unprecedented new highs with this modern Hudson Sharp machine. Sturdily constructed and completely rotary in operation it carries paper from parent rolls through feed rolls, into folding cylinders, and continuously delivers a product of exact sheet count to the packaging unit. Equipped with a semi-automatic banding unit, one operator easily handles the machine's entire output. Embossing units can be added if desired.

### ROTARY TOWEL AND WAX INTERFOLDER

Designed to produce interfolded towels in any standard size, this machine produces from 10 to 12 cases, per towel width, per hour! Completely rotary in operation, all necessary adjustments are simple to make and easily accessible. Furnished in any widths up to 60" in all standard sizes and folds. Besides towels, this machine is practically adaptable for interfolding wax papers, glassines, butcher wraps, delicatessen papers and others. Write for complete information on any of these popular Hudson Sharp machines that are continuously increasing converting production throughout the industry.



*Putting Ideas to Work*

FOOD MACHINERY AND CHEMICAL CORPORATION

**FMC Packaging Machinery Division**

Hudson-Sharp Machine Company

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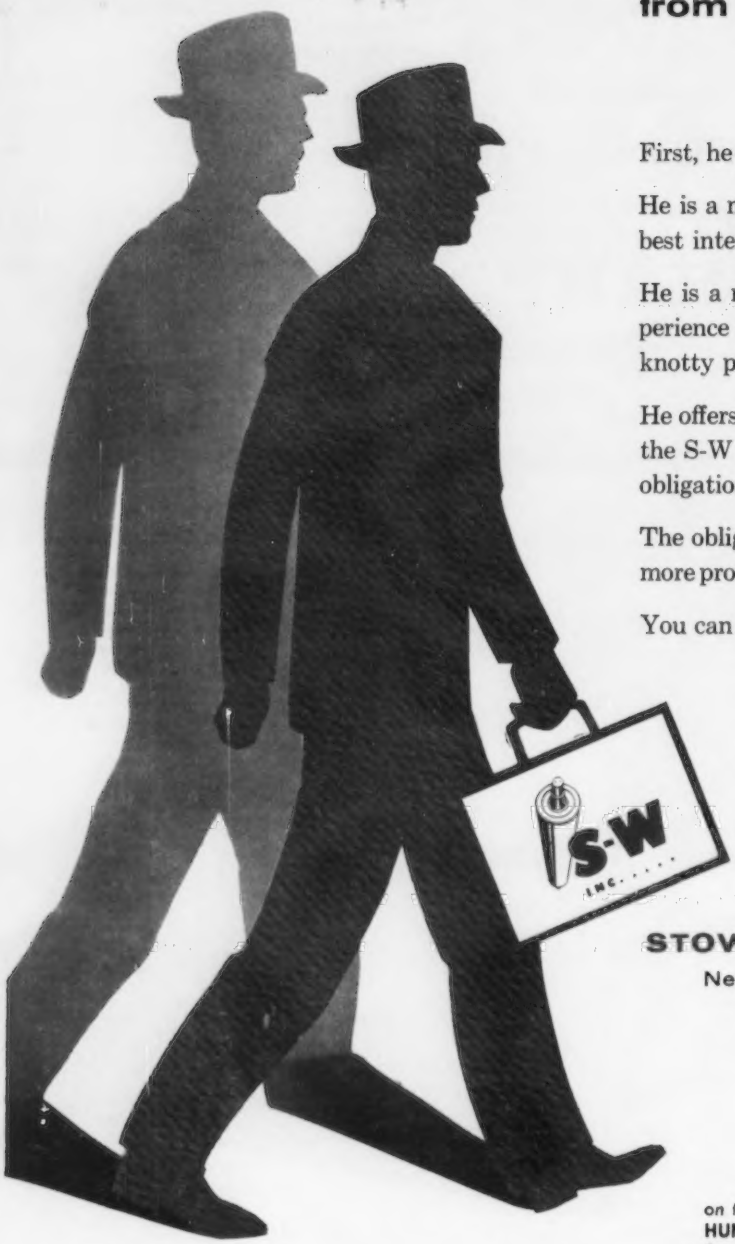



## WHAT (you may ask) is a SALES ENGINEER from Stowe-Woodward?

First, he is a man.

He is a man who *always* places his customer's best interests ahead of his own.

He is a man with many years of *valuable* experience in using rubber-covered rolls to solve knotty processing and production problems.

He offers you his experience, plus the ability of the S-W Technical Service Department, at no obligation to you.

The obligation is all his — to help you process more product for every dollar you invest in rolls.

You can reach him by calling S-W.

**STOWE-WOODWARD, INC.**
Newton Upper Falls, Mass.
Neenah, Wisconsin
Griffin, Georgia

*on the West Coast*
**HUNTINGTON RUBBER MILLS, INC.**
Seattle, Washington • Portland, Oregon
Port Coquitlam, Vancouver, Canada

# Trends

**EDITOR EVANS REPORT**
**Date Line: Glasgow**

The editor's two principal impressions of British paper and board mills are the emphasis on quality and on appearance of the mills. It appears that the customers of the British mills demand, and the mills supply, a higher quality of product than is customary in North America. The tasteful appearance of both the exterior and interior of the mills visited by the editor were notable.

**Inspects Pulp Mill**

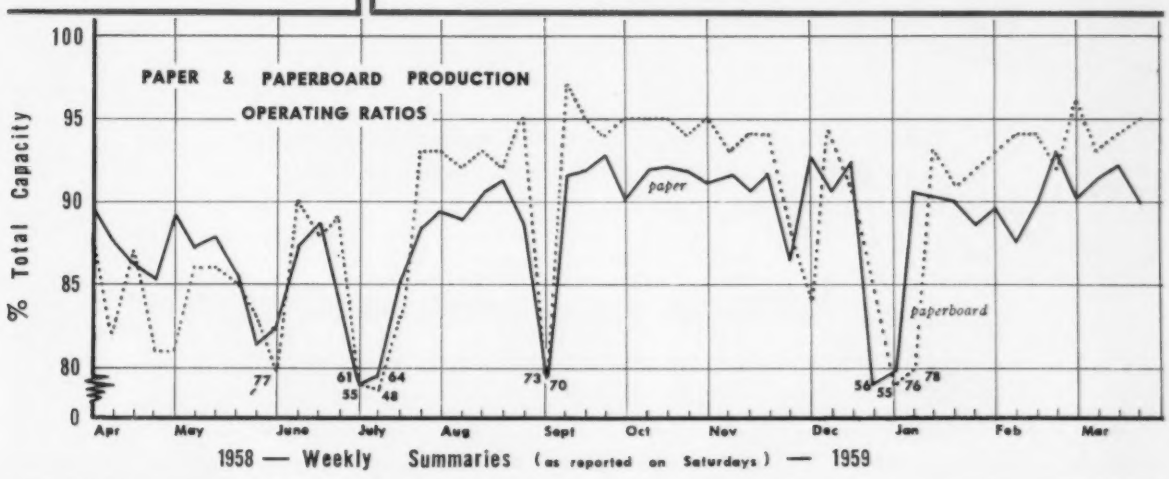
The first pulp mill designed to operate on home grown softwoods is due to start up shortly at the Bowaters Mersey mill, Ellesmere Port, England. This is a groundwood mill with initial production of about 200 tons per day which will supply the Mersey newsprint mill. Pulpwood will be spruce from forestry plantation thinnings in Wales and Scotland.

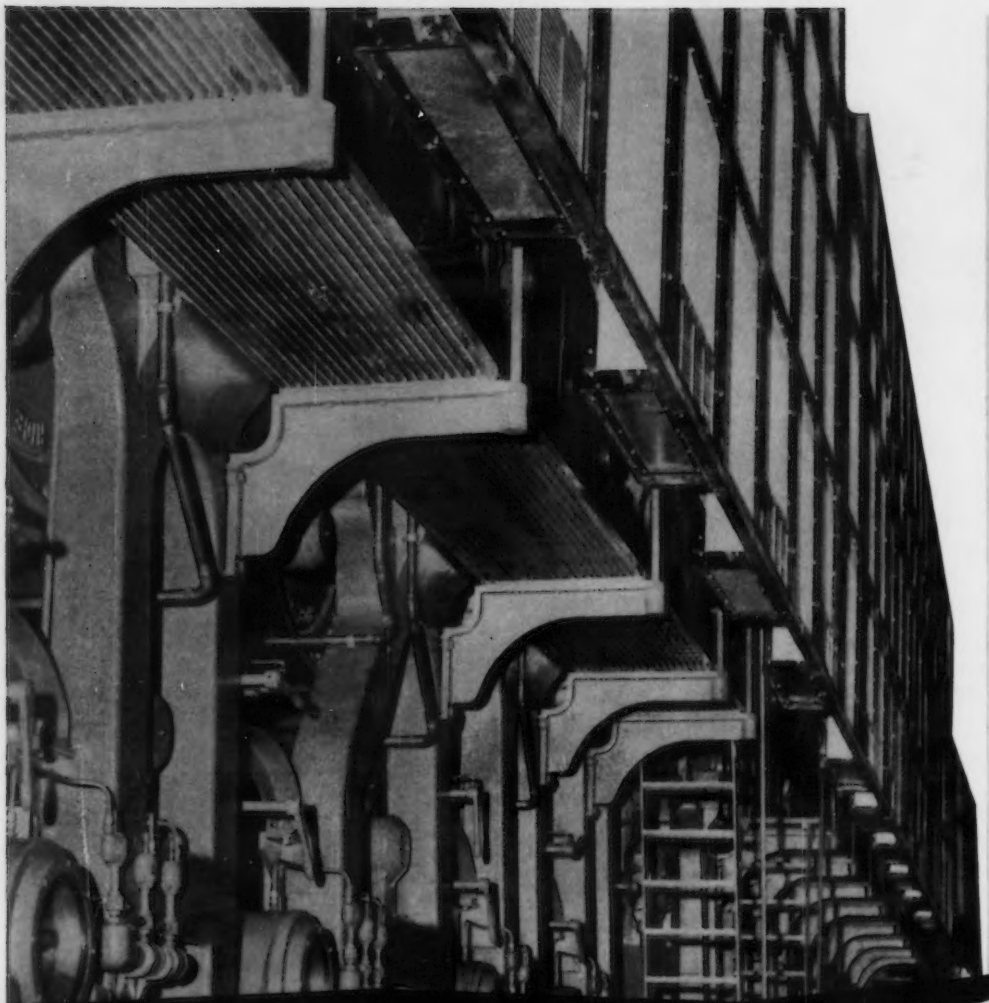
**Calls Machine Revolutionary**

The most revolutionary concept in paper and board making since the development of the fourdrinier and cylinder machines was inspected by the editor last week. This was the operation of the Inverform machines at St. Anne's Board Mills in Bristol, England. The company has in operation a full size commercial machine making four-ply folding boards. This was developed from the company's four-ply board and single-ply paper pilot machines. The latter machine is designed for speeds of 5000 f.p.m. and has been used in experimental runs to make newsprint at speeds well in excess of 3000 f.p.m. The Inverform machine will be the subject of a special feature when the editor returns from his European tour.

**Sees Potential for Our Market Pulp**

As the world's second largest (next to the United States) paper and board producing country, with virtually no pulp production facilities, Great Britain is one of the biggest single existing markets for pulp. With the expanding growth in paper consumption here, there is a big potential for our North American market pulp mills.





## BIG, FAST and TYPICAL.....

Typical of Rice Barton papermaking machines is that built-in extra quality — that gives you all you bargained for, and more — much more.

**RICE BARTON CORPORATION**

WORCESTER, MASSACHUSETTS U. S. A.

*Paper Machinery Builders Since 1837*

RICE BARTON

PAPER TRADE JOURNAL

WEEK OF APRIL 13, 1959

# Guatemala to Make Papers, Boost Paperboard Output in New Project

Central America's first paper manufacturing facilities are now under construction in Guatemala, where local interests and the Gottesman Organization of New York have joined forces in a major, privately financed development project. By the end of this year, Guatemala will produce various grades of bleached and unbleached papers, greatly increase its paperboard output, and market these products throughout Central America.

Base of operations for the new venture is the paperboard mill at Escuintla, Guatemala, the only such mill in Central America. It is now in the process of modernization and expansion. Industria Papelera Centroamericana, S.A., a company recently formed to undertake this new development, expects to more than double current mill capacity. When completed, capacity of the mill's two machines is expected to be about 15,000 tons per year of paper and board.

Details of the project were reviewed in New York by Ira D. Wallach, president of Central National Corp. and Central National Commercial Co., Inc. Both companies are members of the Gottesman Organization, active in the pulp and paper industry throughout the world.

"Industria Papelera Centroamericana is the result of careful surveys of production and marketing potentials in the developing countries of Central America," Mr. Wallach said. "We joined forces with Minor R. Keilhauer and Jaime and Enrique Arimany, owners of the former Industria Papelera Guatemalteca paperboard mill at Escuintla, in a common effort to build up the industry in Guatemala. Mr. Keilhauer, a leading Guatemalan industrialist, has been elected president of the new organization."

The first phase of mill improvement at Escuintla was recently completed with the laying of new foundations, based on plans drafted by Alvin H. Johnson & Co., Inc., well-known consulting engineers of New York.

The second phase gets under way this week with the shipment of a fourdrinier machine for installation in Guatemala. Significantly, the fourdrinier is being shipped to Guatemala by the first Guatemalan registry merchant vessel, M/S. "Quetzaltenango," making her maiden voyage. The loading will be marked by a ceremony in Albany, N. Y., attended by Guatemalan and other officials.

Additional equipment will be shipped from various U. S. ports in the near future, with full mill production planned before the end of the year.

Technical, marketing, and management assistance will be provided by the Gottesman Organization. It will also provide export sales services in El Salvador, Costa Rica, Honduras, Nicaragua and other markets through Central National Commercial Co., Inc.

Working most closely with Mr. Keilhauer as officers, directors, or alternate directors are Jaime and Enrique Arimany of Guatemala, and Carlton F. Diskin, Samuel M. Goldman, Henry J. Trolin and Samuel Ungerleider, Jr., all associated with the Gottesman Organization in New York.

## Gorham Mfg. Purchases Eaton Paper Corp.

Wilbur H. Norton, president and chief executive officer of the Gorham Manufacturing Co. of Providence, R. I., and Harry C. Dutton, president, The Eaton Paper Corp. with headquarters in Pittsfield, Mass., have announced a plan for the affiliation of these two long-established New England companies.

The Eaton Paper Corp., a pioneer in the development of fine letter papers, will become a subsidiary of Gorham, the largest and one of the oldest manufacturers of sterling silverware.

Negotiations, which have been under way for several months, were completed last week when the boards of directors of both organizations approved the plan, which envisions the acquisition by Gorham of substantially all of the Eaton stock.

There will be no change in the operation or personnel of the paper company. The present management group will continue under the leadership of Mr. Dutton, and operations in Pittsfield will go on as before.

The purchase is part of Gorham's plan for product development and diversification.

## Bowater-Scott and Belgian Firm Form New Company

Scott Paper Co. has announced that its English affiliate Bowater-Scott Corp., Ltd., has joined with Papeteries de Belgique in the formation of a new corporation in Belgium to serve a substantial part of the European common market with household tissue products.

Bowater-Scott Corp. was organized in 1956 with its capital stock divided equally between Scott and Bowater Paper Corp. of London. Papeteries de Belgique is the leading paper manufacturer in Belgium.

The newly formed Belgian corporation, called Bowater-Scott Continental, S.A., will convert paper stock supplied it by Bowater-Scott of England into finished tissue products and distribute them in Holland, Belgium, Luxembourg, and the northern sections of France and West Germany —an area with a population exceeding 70,000,000.

With an authorized capital of $1,000,000, Bowater-Scott Continental is owned in equal shares by Bowater-Scott of England and Papeteries de Belgique. The headquarters of this new corporation will be in the administrative offices of Papeteries de Belgique in Brussels where all marketing and sales activities will be centered. Its converting operations will be carried on at the site of the Lembecq Mill of Papeteries de Belgi-

que, about 10 miles south of Brussels.

Papeteries de Belgique operates four mills in Belgium and produces newsprint, folding boxes, shipping cases, labelling and wallpaper stock, fine writing papers and cellulose wadding.

Bowater-Scott of England owns two mills and manufactures various household and industrial paper products, including a single-ply bathroom tissue and boxed facial tissues which are sold under the famous "Scot-Tissue" and "Scotties" trademarks of Scott Paper Co.

## Waste Paper Use Predicted At 5 Per Cent Over 1958

Consumption of waste paper in 1959 is expected to total 9.1 million tons, 5 per cent over the 1958 level, Peter W. Hoguet, president of the Econometric Institute, predicted at the Annual Convention of the Paper Stock Institute of America at the Edgewater Beach Hotel in Chicago on April 8th. Mr. Hoguet stated that the actual demand by mills using waste paper probably will be 6 per cent higher than in 1958 because of the need to rebuild new inventories.

The inventory at consuming mills at the end of 1958 was enough to last only 18 days, according to Mr. Hoguet, compared with a 22-day supply at the end of 1957. Inventories of waste paper will therefore have to be increased about 110 thousand tons during 1959 to get into line with increased consumption at the mills.

Regarding the long-term outlook for waste paper consumption, Mr. Hoguet stated that trends in suburbanization and dispersion of population and businesses had been unfavorable to efficiency in the waste paper industry through most of the post World War II period. On the favorable side, over-all increases in paper and paperboard production are tending to make waste paper collection a more efficient process. Mr. Hoguet stated that it is likely that the waste paper industry will probably share more equally in the over-all growth trend of the paper and paperboard industry, as the improvement in total supply tends to more than offset the dispersion factor.

Mr. Hoguet said that the waste paper industry would need to emphasize quality and market stability more in coming years if it is to realize fully its potential. He added that the basic conditions in the paper and paperboard industry offer excellent prospects in which the waste paper industry can meet its problems.

## Paper and Board Production

According to the American Paper and Pulp Ass'n., the ratio of the United States production to mill capacity for the week ending March 28, 1959, was 89.9 per cent compared with 93.7 per cent revised for the preceding week. The ratio was 90.5 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending March 28, 1959, was 95 per cent compared with 94 per cent for the preceding week and 86 per cent for the corresponding week a year ago.

*(Detailed statistics on page 62.)*

## NAWMD Elects Officers

George H. Einhauser, G. H. Einhauser Co., Pittsburgh, Pa., was re-elected president of the National Association of Waste Material Dealers, Inc., at the 46th Annual Convention luncheon-meeting on Tuesday, April 7th at the Edgewater Beach Hotel, Chicago, Ill.

Renamed as vice presidents of NAWMD were: Arthur U. Claghorn, Pioneer Paper Stock Co., Chicago, Ill.; Theodore Gruen, International Minerals & Metals Corp., New York; and Leo Selig, J. Solotken & Co., Inc., Indianapolis, Ind. Elected as a vice president was Harold Kurtin, Kurtin Wool Stock Co., Brooklyn, N. Y.

## University of Maine Plans Research Program

Announcement of the program for the Open House and Research Days program at the University of Maine on May 1-2, sponsored jointly by the University of Maine and the University of Maine Pulp and Paper Foundation, was made by J. L. Ober, Beverly, Mass., president of the Foundation and former vice president of Scott Paper.

Thomas B. McCabe, Chester, Pa., head of the Scott Paper Co., will speak at a dinner meeting on Friday, May 1st.

Another highlight of the two-day event will be the after-luncheon program on Friday. Fred Soderberg, vice president of F. C. Huyck and Sons, Rensselaer, N. Y., will preside and the speakers will be William H. Chisholm, president of the Oxford Paper Co., Rumford, Me.; M. C. McDonald, president of the Great Northern Paper Co., Millinocket, Me.; Ralph A. Wilkins, vice president of Bird and Son, Inc., East Walpole, Mass.; and two recent graduates of the paper curriculum who are now employed in the paper and allied industries.

Later a panel discussion will be held in the Main Lounge of the Memorial Union Building with students in the scholarship program of the Foundation participating. Professor Lyle C. Jenness, head of the chemical engineering department will be the chairman.

A second panel discussion later in the afternoon will provide the students an opportunity to ask questions of representatives from industry. Dean Weston S. Evans, of the College of Technology, will preside.

Mr. Ober will preside at the evening session and Mr. McCabe will be the principal speaker.

Twenty-four projects will be demonstrated in the various laboratories as a part of the morning programs.

Typical titles of these projects are: "Effects of Chemical Treatments on the Drainage Characteristics of Wood Pulp"; "Demonstration of the Pilot Plant Paper Machine"; "A Study of the Effect of Drying with the Yankee Dryer on Shrinkage and the Physical Properties of Paper"; "Liquid-Liquid Extraction Spray Column"; "Determination of the Properties of Spent Cell Liquor from an Electrolytic Bleaching Ce"; "The Effect of Surface Active Agents on Pipe Friction for Flowing Pulp Stocks"; and "A Study of the Operating Characteristics of the Bowen Spray Dryer."

Registration will take place in the Memorial Union Building at 9 a.m., Friday, May 1st. The laboratory demonstrations will follow at 10 a.m.

Laboratory demonstrations, inspection of laobratories, and informal consultations with staff members and students will be held Saturday morning.

## Study on Chemical Debarking Published

The State University College of Forestry at Syracuse University has published a follow-up to the Technical Publication on "Chemical Debarking of Some Pulpwood Trees," published in 1956. The latest study entitled "Chemical Debarking—Is It Economically Advantageous?" reports the results of a comparative study of chemical debarking, drum debarking and sap peeling. It was financially assisted by a $1200 fellowship, which constituted the re-

maining funds from the Chemical Debarking Project.

The comparison is made from the viewpoint of a pulp mill and considers the following cost elements for each method of bark removal: debarking costs, transportation and handling costs, cost of purchased wood, forest ownership costs and the capital requirements of each debarking system. A comparative analysis of these five factors indicates that drum debarking will ordinarily be the most economical method of bark removal from pulpwood. Chemical debarking and sap peeling may be more economical under special circumstances.

A limited number of copies are available on request to APA Members from this office. Others should write the State University College of Forestry, Syracuse, N. Y.

## IBM Announces New "Carbonless" Paper

The supplies division of International Business Machines Corp. has announced the availability of business forms utilizing a new "carbonless" paper on which copies of forms can be made without using carbon paper. Now being used in IBM punched card sets, the paper was developed by Oxford Paper Co. with IBM's assistance.

The punched card sets in which IBM employs the paper are of the type widely used throughout business and industry to produce multiple copies of retail sales slips, money orders, credit card billing forms, freight waybills, and similar documents.

## Pulp and Paper Day To Be Held April 14

The second annual southwide Pulp and Paper Day will be observed in 12 southern states on April 14 with the launching of 91 Pilot Forests. These forests are being dedicated as a forestry showcase set up by members of the Southern Pulpwood Conservation Assn. The Pilot Forest projects were established by the SPCA to demonstrate to owners of small woodland tracts the "tremendous economic opportunities offered by tree growing." This project is said to be one of the most extensive ever undertaken by an entire industry.

The paper company members of SPCA are undertaking to do a complete initial forestry job on property of selected owners of small woodland tracts. This work will include scientific harvesting, controlling undesirable species, establishing fire control measures and planting seedlings wherever appropriate. All work is being carried out without cost to the owner, who will receive the income resulting. The purpose is to inform and educate other landowners to the value of good forestry by establishing these permanent examples as guides.

**Our editor, John Evans, reports to us this week from Glasgow, Scotland. His comments on the paper and board industry in England are contained on the Trends page.**

**By the time this issue of Paper Trade Journal reaches you, Mr. Evans will have left Glasgow for Copenhagen and Stockholm. His schedule includes a week in Sweden covering the pulp and paper industry activities there. His next stop is Helsinki, Finland.**

## Researcher Reports Pulp Structure Findings

Increased flexibility in tailoring dissolving pulps to specific end uses will be possible as a result of new discoveries in fiber structure at Buckeye Cellulose Corp., according to Karl A. Jurbergs, a Buckeye research chemist.

Reporting the details of electron microscopic research on fiber morphology at the 135th national meeting of the American Chemical Society, Mr. Jurbergs stated that Buckeye's findings have added significantly to present fiber knowledge and have cleared up some of the controversies concerning fiber structure. With the new knowledge, he continued, pulp producers will be able to relate pulp purification processes more closely to end-use processing reactions.

Noting that electron microscopy has come into use in the pulp industry only within the past decade, Mr. Jurbergs reported that Buckeye's fiber studies were carried out mostly at a magnification of 5900 diameters —enough to magnify a fiber 1/600 inch in diameter to the size of a telephone pole.

The study of dissolving wood pulps from slash pine and sweetgum showed that the primary fiber walls are destroyed, Mr. Jurbergs said. They are removed along with interfiber bonding materials in both the sulphate and sulphite purification processes. The primary fiber wall is also removed from cotton linter pulp during purification.

## 10th Testing Conference Scheduled for August

The 10th Testing Conference of the Technical Association of the Pulp and Paper Industry will be held August 17-21, 1959, at the Multnomah Hotel, Portland, Ore.

A special feature of the conference will be a panel discussion on pulp evaluation. Roy P. Whitney, Dean of Students, The Institute of Paper Chemistry, Appleton, Wis., will be moderator of this discussion, which will feature a group of recognized authorities in the field of pulp evaluation.

The conference will include two days of technical sessions, visits to local pulp and paper mills, testing committee meetings and a logging trip.

## Scholarship Available

A scholarship in the amount of $750 is offered by PAPER TRADE JOURNAL to a student who wishes to enter the University of Maine to major in pulp and paper technology. This is a continuing grant available in the freshman and sophomore years. The main purpose of the scholarship is to enable a student to major in pulp and paper at the University of Maine who might not otherwise be able to do so. Therefore the financial need of the student will have an important bearing on the choice of the recipient, to be selected by the Freshman Scholarship Committee of the University of Maine.

Application forms for this scholarship should be requested from the Director of Admissions, University of Maine, Orono, Maine. Early application is advised. If our readers know of such needy students they are requested to advise them of the availability of this scholarship.

# PAPER PEOPLE

E. B. Hinman

W. T. Bennett

## Canadian International Announces Three Promotions

E. B. Hinman, vice president of Canadian International Paper Co., has been appointed general manager of the company, it was announced by Vernon E. Johnson, president, following a meeting of the board of directors.

W. T. Bennett, chief engineer of the company since 1950, has been appointed vice president, engineering, Mr. Johnson also announced.

The appointment of F. J. Giffen, manager of the company's pulp division, to the position of manager of manufacturing was announced by Mr. Hinman in his new capacity as general manager.

Mr. Hinman joined Canadian International in 1936 at the company's mill at Gatineau, Quebec. In 1947 he moved to Dalhousie as paper mill superintendent of the New Brunswick International Paper Co. mill there. Three years later, he became general superintendent of the C.I.P. mill at Trois-Rivières, returning to Dalhousie in 1952 as mill manager.

In 1953 Mr. Hinman moved to the company's Montreal offices as manager of newsprint mills, becoming a vice president in 1956. He became a naturalized Canadian citizen last year.

Mr. Bennett joined International Paper Co. in New York in 1924, coming to Canada four years later as chief draftsman at the C.I.P. Gatineau mill. He subsequently became plant engineer at Gatineau.

He moved to Montreal as assistant chief engineer for the company's newsprint division in 1942, becoming chief engineer of the division two years later. In 1950 he was appointed chief engineer, and served in this capacity through a period of major capital improvements to the company's mills. He became a Canadian citizen in 1953.

Mr. Giffen joined Canadian International Paper Co. in 1929 as assist-

F. J. Giffen

ant control superintendent at the Trois-Rivières mill, becoming general superintendent of the mill in 1938.

In 1942 Mr. Giffen moved to Montreal as assistant to the manager of the company's newsprint division, becoming assistant manager of the division in 1949 and manager a year later. He was appointed manager of the pulp division in 1953.

### McDonald Joins Riordon

Cecil E. MacDonald has been appointed assistant to the president of Riordon Sales Corp., Ltd., it has been announced. The company markets dissolving pulp and paper pulp.

Prior to his new appointment, Mr. MacDonald spent 12 years with Canadian International Paper Co. in the Manufacturing Division. In 1957, he was assigned for a year with the Pulp and Paper Research Institute of Canada in Montreal as supervisor of a joint industry research project for the Canadian newsprint manufacturers.

### St. Regis Names DeLong Asst. Dir. of Forestry

St. Regis Paper Co. announces that Robert DeLong has been appointed assistant to Paul M. Dunn, director of forestry, to serve as liaison and to coordinate activities of Federal, state and private forestry groups in the Pacific Northwest.

Mr. DeLong, whose appointment becomes effective April 1st, has been associated with St. Regis in the Northwest since November, 1944, and has been assistant general manager of logging and assistant to the logging manager. He will continue to make his headquarters at Tacoma, Wash.

Among the associations in which Mr. DeLong is active are: chairman, Western Technical Committee, American Pulpwood Association; chairman, Washington Committee, American Forest Products Industries; trustee, Keep Washington Green; and regional and state forestry groups.

### Cryan Succeeds Conley At Fraser Paper

John R. Cryan has been appointed general sales manager, Fraser Paper, Ltd., in New York, according to an announcement issued at the company's mills by Aubrey Crabtree, chairman and president. Mr. Cryan succeeds James G. Conley who is retiring but will continue to serve the company in an advisory capacity.

Mr. Cryan has been in the employ of Fraser Paper for almost 30 years. Prior to his new appointment, he was sales manager in New York. He now assumes the responsibility for the sale of all the company's products.

A native of Syracuse, N. Y., Mr. Conley has been active in the paper industry for 37 years. He was successively with the sales departments

# DOWN WITH PAPER MACHINE SHUTDOWNS

## *They cost too much money!*

**VICKERY FELT CONDITIONERS** keep press felts continuously clean, open and absorbent, no matter what the size and speed of the felt.

No more mid-week shutdowns to unclog dirty felts.

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With paper machine operating costs as high as they are today, you simply cannot afford to let your felts go dirty and get filled up. Vickery Felt Conditioners are among the most profitable, quick return equipment investments you can make in the mill.

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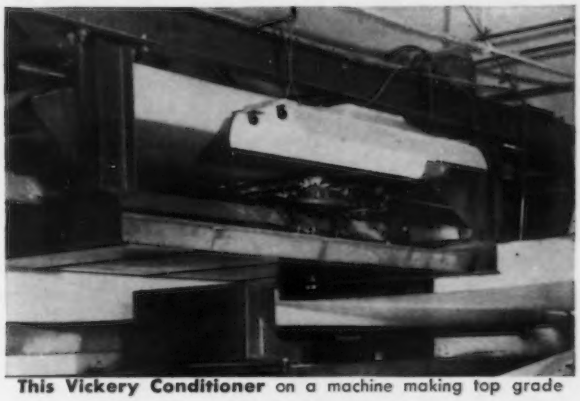
**This Vickery Conditioner** with four conditioning boxes on a big, high speed book machine felt is of the new, self-contained traveling header design. It is equipped with hydraulic drive.



**This Vickery Conditioner** on a machine making top grade writings is saving *two or three shutdowns* a week.

**Vickery Wet Felt Conditioners** are doing an equally effective, money-saving job of reducing cylinder machine shutdowns. Top and bottom felts are continuously clean and open. Crushing is often avoided. Shower volume is minimized. Felt life is often greatly increased. Machine speed is maintained right through the week.

**VICKERY** *FELT CONDITIONERS*

of the Sealright Division of Oswego Falls Corp. (now the Sealright Co.), the Riverside Paper Corp. and Mead Sales Co.

## Hinde & Dauch Div. Announces Promotions

Appointment of G. J. Swank as manager of administration services for the Hinde & Dauch Division of West Virginia Pulp and Paper Co. was announced by L. Frank Thompson, division manager, recently. In his new position, Mr. Swank is responsible for coordinating and directing the staff functions of personnel, accounting and cash flow, credit, purchasing and traffic. He succeeds William E. Richardson whose death occurred recently.

The Hinde & Dauch Division operates 15 box factories located throughout the East, Midwest and South from division headquarters at Sandusky, Ohio.

Jay M. McGookey, Jr., member of the purchasing department since 1935 becomes head of the purchasing department.

## Erickson Named Sales Co-Ordinator at Potsdam

James Erickson has been promoted to the position of sales co-ordinator at the Potsdam, N. Y., mill of Nekoosa-Edwards Paper Co., a leading producer of business papers, it was announced today by G. E. Veneman, vice president and director of sales. He will assume his new duties April 1.

He has been with the company since 1950 handling various assignments in the sales order department in Port Edwards, including order processing, shipment expediting and sales correspondence.

## Fraser Promotes Martin

Neal Martin has been appointed assistant divisional chemist of Fraser Paper Ltd., according to a recent announcement made by W. A. Ketchen, technical director of the company.

Born at Franklin, N. H., Mr. Martin was graduated from the University of New Hampshire in 1949 with the degree of B.Sc. in chemical engineering.

Upon graduation, he joined Fraser Paper as a junior chemist. He subsequently became senior chemist, control chemist, and now assistant divisional chemist.

D. O. Adams

F. H. Freuler

## Westvaco Names Adams and Freuler to New Posts

Daniel O. Adams, director of the Covington Research Laboratory of West Virginia Pulp and Paper Co., has been promoted to a new position with the Kraft Division of the company in Charleston, S. C. Dr. Adams will become superintendent of the technical service department. In addition to the technical service group, the department includes the product and process control laboratories, quality control, product development and other functions.

Fred H. Freuler, associate director of the Covington Research Laboratory, will succeed Mr. Adams as director.

From 1948 to 1955, Mr. Adams was chief chemist of the research division of Bird and Son, paper and roofing manufacturers in East Walpole, Mass. Previously, he had been with West Virginia in Covington, Va., as a research project leader in the old experimental plant.

Mr. Freuler joined the New York engineering department of West Virginia Pulp and Paper Co. in 1954. He became a member of the Covington research organization in 1956 and was advanced to associate director in 1958. Since joining the Covington research facility, he has been heading up the company's papermaking research program, including developmental work on Clupak stretchable paper.

Before joining West Virginia, Mr. Freuler was engaged as an engineer with Pusey and Jones Corp., a Wilmington, Del., manufacturer of paper machinery. Previously he spent several years with a Swiss paper manufacturer and an engineering firm.

## Fitchburg Paper Names Grado Vice Pres.

John Grado, Jr. has been named vice president and member of the board of directors of Fitchburg Paper Co., George R. Wallace, chairman of the board and president of the company, has announced.

Mr. Grado is general manager of the Decotone Products Division and vice president of Decotone Central Corp., Cleveland, Ohio, a subsidiary of the company. He joined Fitchburg Paper Co. in June of 1956 as chief industrial engineer. In January of 1958 he became general manager of the Decotone Products Division.

After serving in the Naval Air Corps during World War II, Mr. Grado attended Virginia Polytechnic Institute where he received a degree in industrial engineering. Following graduation, he worked for two years as assistant chief industrial engineer with Monroe Calculating Machine Co., Bristol, Va. In 1954, he joined West Virginia Pulp and Paper Co. in Luke, Md., where he worked as assistant finishing superintendent and industrial engineer.

He is a member of the American Institute of Industrial Engineers and Technical Association of the Pulp and Paper Industry.

## Ekholm Elected Director Of Puget Sound Pulp

Erik T. Ekholm, vice president of Puget Sound Pulp and Timber Co., has been elected a director of the company to complete the unexpired term of J. J. Herb, who died March 1.

Mr. Ekholm joined Puget Sound Pulp as mill superintendent in 1927. He later became general superintendent and was elected vice president in charge of operations in 1950.

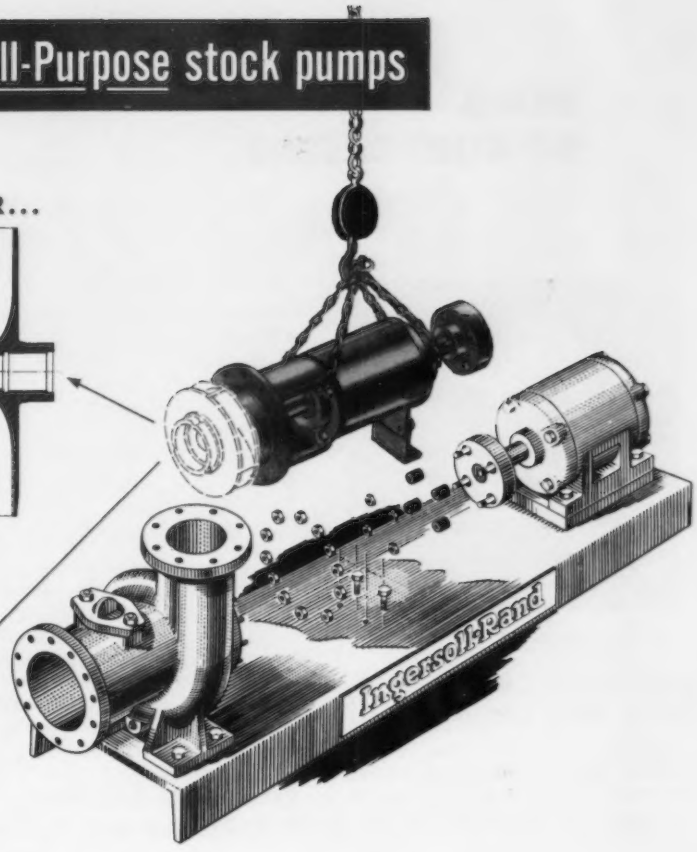
# Ingersoll-Rand All-Purpose stock pumps

**A. CONVENTIONAL IMPELLER...**
**For normal stocks up to 4% consistency**

Note that the width decreases from center to periphery. For stocks with concentrations as high as four per cent, this impeller is the most suitable.

**B. DIVERGING IMPELLER...**
**For high consistency or entrained-air stocks**

Note how width *increases* from center to periphery. Material cannot enter fast enough to replace ejected material, and a vacuum forms between blades. Any entrained air or gases pass through the vacuum space without binding; solids and slurries pass through without abrupt acceleration.




## You can switch this pump from normal to heaviest stock service...

### *simply by changing impellers and casing rings!*

Here, for the first time, is a centrifugal pump which can be converted from handling normal stock (up to 4% consistency) to your heaviest stock... up to 10% consistency, containing large amounts of entrained air or gas. *All you do is switch impellers* and casing rings on the Ingersoll-Rand *All-Purpose* stock pump: The conventional impeller and the patented diverging impeller (see explanation above) are completely interchangeable.

All other parts are identical, which means you can cut your spare parts inventory at least in half ... because one basic pump can be adapted to handle any type stock. This gives you unprecedented flexibility in changing stocks and varying concentrations.

When you convert to the exclusive I-R diverging impeller, you have a pump which will not clog or vapor bind, which is self-venting and self-regulating. It will easily handle industrial liquids which other types of centrifugal pumps cannot handle.

Get complete details on the Ingersoll-Rand *All-Purpose* stock pump from your local I-R representative, or write direct.

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# NEWS OF CONVERTERS

Thomas B. Haire

## Continental Can Names Haire Mfg. Engineer

Thomas B. Haire has been appointed manufacturing engineer for the Fibre Drum & Corrugated Box Division of Continental Can Co., it was announced by J. P. Greiveldinger, division manager of manufacturing engineering.

A plant engineer with Container Corporation of America since 1948, Mr. Haire comes to Continental with considerable experience in the area covered by his new position—assisting all the company's corrugated plants in resolving engineering problems that arise in connection with their manufacturing equipment.

Mr. Haire, a graduate of Lafayette College, will maintain his headquarters at the Division's New York City office.

## Gardner Promotes Five

Five promotions have been announced by The Diamond Gardner Corp.

Jim Groome has been promoted to eastern sales manager, carrier cartons. He will continue working out of the Greensboro, N. C., office where he has been since joining Gardner in 1954.

Ken Klein has been promoted to marketing research analyst. He joined Gardner in 1957 as a management trainee in market research.

Robert Wilson has been promoted to specialist, product development. Beginning his career at Gardner as a management trainee in 1954, Mr. Wilson became quality control foreman in 1955. In 1956 he was made staff assistant to the superintendent of the Lockland carton plant.

Douglas S. Ball has been promoted to manager, sales service. His first job with the company was as an hourly-paid employe in the Middletown carton plant in 1939. He became a sales correspondent in 1952.

Paul Wilch, Jr., has been promoted to assistant to the manager, dry carton sales. He started with Gardner in the Middletown carton plant in 1941, and became a sales correspondent in 1950. In 1954 he was promoted to supervisor, carton sales service, and in 1957 was named supervisor of sales service.

## Bemis Bag Acquires N.J. Ribbon and Carbon

The Bemis Bro. Bag Co. has acquired Rose Ribbon and Carbon Mfg. Co. of Harrison, N. J., one of the leading manufacturers of duplicating carbons, it was announced last week.

The company will operate as a wholly owned subsidiary of Bemis with Adolph Rose as president. No change in management, personnel or operating policies will result from this affiliation and Rose Ribbon & Carbon Mfg. Co. will continue to serve its customers as in the past.

## Powlenko Joins Mead

Edward J. Powlenko has been named director of packaging engineering service for Mead Containers, Inc. Formerly he was packaging engineer for the Home Laundry Department of General Electric.

## Ohio Firm Acquires Gibraltar Paper Co.

The Gibraltar Corrugated Paper Co. of North Bergen and Jersey City has become part of the Mead Corp. of Dayton, Ohio.

Under agreements announced by William J. Cassady Jr., president of the Ohio concern, the North Bergen plant of Gibraltar, at 8101 Tonnelle Ave., becomes a division of the Mead Corp. of Dayton.

The Jersey City plant, at 350 Warren St., housing Gibraltar's display division, becomes a division of a Cincinnati subsidiary of Mead, called Mead Containers, Inc.

Mr. Cassady said no changes in personnel, administration or policies of either unit are contemplated.

Leonard T. Moore

## Moore Named Gen. Mgr. Of New Chicago Plant

Leonard T. Moore, Midwestern regional sales manager for the Paper Products Division of Owens-Illinois Glass Co., has been appointed general manager of the division's new Chicago plant which is nearing completion. He will continue as Midwestern regional sales manager.

The appointment was announced by Edwin D. Dodd, vice president and assistant general manager of the division. Mr. Moore's new duties began March 16th, although the present Paper Products operation in Chicago will not be transferred into the plant until on or about May 1st.

A veteran of 25 years in the packaging industry, Mr. Moore was vice president of the Bernard Paper Co. three years before establishing his own firm, Moore Boxes, Inc., in 1936.

In 1946 Moore Boxes, Inc., became part of National Container Corp. Mr. Moore became a vice president of National, and in 1949 was named midwest division manager. He became regional sales manager in 1956.

## Highland Container to Be Union Bag-Camp Subsidiary

Union Bag-Camp Paper Corp. has announced that it has acquired a substantial controlling interest in Highland Container Co., Jamestown, N. C., through an exchange of stock. The company will be operated under its original name and with its present personnel as a subsidiary of the parent organization.

# No. 1 Requirement: *Quality*

## *Here's How a Mill Kept It... And Saved $.95 per Paper Ton!*

### Cash savings on size requirements multiplied by power savings, cleaner machines, better retention

Fine writing paper production can not take process short-cuts which affect quality . . . so this instance of Nalco Sodium Aluminate performance is more than a cost-cutting story—sheet specifications were considerably improved with Nalco 680 Sodium Aluminate—on top of all the other advantages!

### Facts from Figures

This is the way the chemical costs work out on a "per ton" basis:

| | |
|---|---|
| Size Requirements (without Nalco Sodium Aluminate)... | 30.25 lb. |
| Size Requirements (with Nalco Sodium Aluminate)... | 21.60 lb. |
| Pounds of Size Saved... | 8.65 |
| Alum Requirements (without Nalco Sodium Aluminate)... | 40.00 lb. |
| Alum Requirements (with Nalco Sodium Aluminate)... | 30.00 lb. |
| Pounds of Alum Saved... | 10.00 |
| Savings on Size (at 15.3 cents per lb.)... | $ 1.32 |
| Savings on Alum (at 2.2 cents per lb.)... | .22 |
| | $ 1.54 |
| Less cost of Nalco Sodium Aluminate (at 10.7 cents per lb.)... | .59 |
| ***TOTAL NET SAVING, per ton of paper*** | **$ .95** |

Add to the dollar savings above: more fines and furnish kept in the sheet; more rapid reaction time to cut soluble alumina losses in the white water; higher pH to give means of adjusting size-alumina-pH ratio, and to cut corrosion damage; lower power requirements and cleaner machines.

Nalco Sodium Aluminate is a concentrated package of stable, soluble alumina and alkalinity that produces positive advantages all along the line!

### Paper Quality Improved

Nalco Sodium Aluminate not only produces spectacular figures in processing savings, but also improved sheet specifications in the mill whose alum-aluminate costs are given above: *Size ratings jumped from a range of 45-50 up to 50-60. Ash content went from 5.6-5.8% to 7-7.1%!*

Other quality improvements include: better aging, folding endurance, burst strength, workability and reduced brittleness.

### Action When It Is Needed

Results with Nalco Sodium Aluminate—and every other Nalco chemical used in paper processing—are backed by Nalco Field Service Men whose experience and willingness to help can be of real value to you . . . whether the situation calls for emergency action or long-range planning for better paper products at lowest possible production costs.

For action that leads to results like these in your mill, call your Nalco Field Service Man, or write:

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Nalco CHEMICALS

# Use of Size Press for Application of Conventional Paper Coatings

**Selection of coating formulation components, their mixing and application at the size press are discussed. Gives sample procedure for single-mixing of ingredients.**

**Harley E. Nelson,**
Technical Director,
Allied Paper Corp.,
Kalamazoo, Mich.

The practice of applying a coating to paper at a size press was brought about by two main reasons; one of quality, and one economic. The quality factor lies in a better surface for subsequent printing or coating operations; and the economic reason lies in the fact that normal paper machine production comparable to uncoated paper can be obtained and still come up with a sheet of paper having from two to six pounds coating per side per ream. This coating normally costs no more and is generally less expensive than the fiber furnish cost. Thus, we have a superior sheet for certain end uses that is lower in cost than the unpigmented grades. This latter statement is not always correct, especially if one is required to use some of the more expensive synthetic adhesives.

### Acceptable Base Stock Needed

Now let us look and see just what is required to produce successfully a satisfactory size press coated paper. The first requirement is an acceptable base stock and let me caution right here, that any imperfections in the base stock cannot be blossed over by the coating, but actually are magnified by the application of the coating and thus always result in a lowering of quality. Since the problem at hand is to improve the surface, we must do everything that is required from a paper making sense to bring a surface to the size press that is as flat and uniform as possible.

I should elaborate here for a moment and emphasize the fact that this flat surface should be the result of proper beating and refining, a well closed formation (not necessarily from slow stock), and even distribution on the wire. The wet felts must be of the correct design and the subsequent pressing in the smoothing press should put a sheet into the dryer section wherein the edges are slightly more moist than the center of the sheet so that when the sheet arrives at the calender stack ahead of the size press, it is of uniform moisture across the web. The subsequent calendering will then lay down the surface fibers to the extent whereby a very flat surface is supplied to the size press nip.

It is general practice to load the sheet with clay and/or opacifying pigments to the extent necessary for the required opacity, and also to size and color the base stock The degree of sizing is governed by end use requirements and is usually the same as for uncoated grades. To prevent undue adhesive requirements, the paper must be moderately sized. It is also well to tint the base stock to the same shade as the coating color. One other important item is to watch the moisture content of the paper just prior to the coating operation. It has been my experience over the years to run fairly dry into the coating nip, namely, 4½ to 5 per cent moisture. If the sheet is too wet at this point, the paper when cut into sheets is very apt to be full of puckers and cockles and resembles a feather tick in appearance. This puckering or cockling results from the coating on the surface drying faster than the base sheet, consequently in local areas the residual moisture causes the base sheet to expand over a larger area than the dryer adhesive layer, thus resulting in the cockles or the puckers.

***. . . that any imperfections in the base stock cannot be glossed over by the coating, but actually are magnified by the application of the coating and thus always results in a lowering of quality.***

### Selective Separation at Nip

There are undoubtedly as many formulations as there are mills applying coating at the size press, however, there are several basic technical concepts that all must adhere to. So as to understand better how to formulate a coating color, it might be well for us to digress a moment and get into the mechanism of a squeeze roll treatment of a disperse phrase. It is common knowledge that when a slurry of dispersion of clay and water is applied at a squeezing nip that only a small percentage of the clay particles get through the nip area. It is also a well-known fact that we can make a mixture out of two viscosities of a chlorinated starch, say a starch having a low viscosity

From a paper presented at the 1959 Annual Pulp and Paper Conference at the University of Western Michigan.

and a starch having a medium to high viscosity we cook these two starches together, and come up with a certain viscosity. After a period of time when we again check the viscosity we find it to be somewhat higher and towards the viscosity of the high viscosity product. After we reach a point where 70 to 80 per cent of the original starch volume is consumed, we find the viscosity to be almost identical to the high viscosity product. Well, what's happened? Very simply, we've experienced selective absorption. The lower viscosity product, which is also composed of shorter molecular chains, has been preferentially accepted at the nip area at the expense of the more viscous, longer-chained molecules. Another illustration of this is that the same phenomenon occurs when one makes a solution of a material such as rye or wheat flour. The freshly cooked batch appears very homogenous, but as one runs this at the size press, the solution gets muddier and muddier and the viscosity rises quite sharply. The reason for this change is that the fiber and protein components of the flour are continually rejected at the nip and only the shorter chained starch molecules get through. The usual result in this case is to sewer about 8 to 10 per cent of the original volume.

### Pigment and Adhesive Selection

Now the whole object of these three illustrations is to point out that in our color formulations we should strive to keep the particle size of the various items used as near alike as possible, or, stating it another way, we should use pigments that have a small particle size for this particular type of a coating application. The adhesives or chemicals used naturally are smaller in particle size than the pigments so it is necessary to select proper size pigments and to disperse and keep dispersed until used.

The pigments normally used in this operation are coating clays, calcium carbonate, and rutile titanium dioxide. We have used most of the domestic coating clays, regular and predispersed, and in general have found most acceptable. This is true also of the imported English clays.

As to calcium carbonate, we have successfully used the ground and the finely precipitated products. When we come to the use of titantium dioxide, we definitely prefer the rutile grades for this type of operation because of the resultant smoother coatings. The anatase grades give a rough finish and are also much harder to bind firmly to the surface and in general the incidence of printer's complaints due to piling on the blanket of an offset press is higher when the anatase grades are used than when using the rutile products. This latter reason is enough in itself without even considering the smoothness angle to make one use the rutile over the anatase types.

Now let us get into the subject of adhesives and here we find that we use starches of various types, animal glue, casein, synthetic latices such as butadiene styrene, acrylics, polyvinyl derivatives, and natural and synthetic gums as well as other resin formulations. Our choice of adhesive or adhesives is determined mainly by the end use of the particular sheet and in general we find that for a base sheet for coating new stock, our starch formulations are adequate, but where we are going to print on this product without further coating, we had better go to an adhesive that we can waterproof and this is especially so for offset printing.

***To prevent undue adhesive requirements, the paper must be moderately sized. It is also well to tint the base stock to the same shade as the coating color.***

### Color Preparation Equipment

There are many other components of these color formulations and I believe a brief description of each would be in order. Before I do this, however, I think that we should spend a little time on the equipment necessary for the preparation of the colors. Generally the size of the batches prepared varies from 250 gallons to 1500 gallons and it can be done in a single tank or in several tanks. The essential mechanical piece required is an agitator that sets up good fluid shear conditions and at the same time draws only a minimum amount of air into the mixture. No air would be wonderful, but I have never seen such an installation. The cooking tank should have its agitator very close to the bottom of the tank so that it can handle small viscous batches when the volume is necessarily low. The larger tanks should also be equipped to have good agitation about a third of the way down from the surface so as to blend in the items that are added late in the preparation cycle.

Indirect steam should never be used in these tanks and live steam, or free of condensate as possible, should be admitted through at least three suitable inlets such as Pennberthy silent water nozzles. They should be placed near the bottom and pointed in directions that are complemented to the directions set up by the agitator. The steam pipes should not project down into the cooker, but should enter the cooker from the sides near the bottom. This is also true of the cold water line so as to minimize foam that one gets from a top addition. The tank itself should have no dead spots and the discharge line should be so constructed that no uncooked starch, clay lumps, partially gelatinized starch, casein or glue lumps can plug up the discharge line or valve. It is also an absolute necessity to have a suitable screening of the coating color prior to its use and also during its use. The vibrating screens do a good job on screening color preparation as well as the overflow from the size press. Good screening can be obtained by the leaf type inline screens, but regardless of how it is done, it is a necessity that good screening be accomplished.

From the cooking or mixing tank the prepared coating color should go through a vibrating screen to a storage tank that is fitted with a very slow speed agitator. Just enough agitation to keep the mixture in motion is all that is required. This slow mixing also gives the batch a chance to de-aerate.

From the storage tank we go to a small machine supply tank wherein the volume should be 50 to 80 gallons. This supply tank then furnishes the showers at the size press, or if preferred, furnishes only the top shower and the overflow then goes into the pan so that the bottom roll can then act as a pick-up roll. The level in the pan is maintained by a suitable overflow pipe.

### Use of Deflocculants

Well, let us get back to the components of the formulation. Most of the clays used are slightly acid as received, the predispersed being closer to neutral than the regular clays. Now this acidity indicates two things. One, our deflocculating agents should be acid, and secondly to prevent protein hydrolysis, the acid component of the clay should be satisfied by the alkali.

The first of these conditions can be met by using a deflocculant such as

sodium acid pyrophosphate, and the second can be satisfied by using from ¼ to ½ per cent caustic soda, in solution form, prior to adding the protein adhesive. Now the deflocculant mentioned is one that is not commonly used, but in my opinion, is one of the better ones. A one per cent solution of S.A.P.B. has a pH of 4.2. It is readily soluble to a 10 per cent solution. At elevated temperatures, reversion to the orthophosphate is about 60 per cent completed after an hour's time. At this point, however, the reversion is stayed and the remaining 40 per cent is believed to be in its original molecular configuration still able to act as a good clay dispersant. In practice because of this reversion, it has been found necessary to use about one-half of one per cent on the weight of the clay, which you will recognize as being more than is generally used in most formulations.

### Role of Soaps

Another very important item of these formulations is soaps. They are generally thought to be internal lubricants and are also used to prevent dusting during the calendering and printing operations. I have no quarrel with this theory, but I believe that they play a much more important role than this.

The role which I assign to metallic soap, such as calcium stearate, is one of a molecular broom. It has the ability to sweep particles through the press nip that otherwise would be rejected. Surprisingly it does not require much of this type of material, two per cent on the weight of the clay generally being more than ample. In formulations where we have not used these metallic soaps, the amount of heavy clay particles remaining in the bottom of the tub has always been considerable, but this is not the case where these materials have been properly used.

### More on Adhesive Selection

Getting into the subject of adhesives, we find that this item of the formulation is determined by the end use of the paper. If our next operation is to be off the machine coating then normally an oxidized starch is used as the binder. The amounts used varies. It is generally in the range from 25 to 35 per cent on the weight of the clay. My personal preference for a choice of starch would be the medium to thin range in viscosity of the so-called oxidized starches. The real thin starches are lacking in strength and the heavy bodied can introduce viscosity problems.

For size press coated sheets that are to be sold as such (most generally for offset printing), I recommend that a protein type adhesive be used that can be waterproofed by the use of formaldehyde. These formulations can be prepared in a single mix by the following procedure:

1. The dispersant is dissolved in the initially required amount of water.
2. The clay is added and agitated and thoroughly dispersed.
3. Caustic soda dissolved in water is added to satisfy the alkali demand of the particular clay being used.
4. The proteins such as casein, alpha, or delta protein is added and then thoroughly wet out, which generally takes at least 30 minutes or more.
5. The temperature of the mix is raised to 130°F. by the addition of live steam.
6. A borax solution at 130°F. equivalent to five per cent on the weight of the protein is added.
7. A solution of ammonia equivalent to 10 per cent on the weight of the protein is added.
8. The mixture is agitated until the proteins are thoroughly cut.
9. The volume is adjusted with warm water to a point slightly under its final volume.
10. A solution of formaldehyde, ammonia and water, quite dilute, is carefully added.
11. The metallic soaps dissolved in warm water are now added and the color mixture given a good agitation.
12. The tinting agents are now added in solution form and the volume is brought to its final mark.
13. If the formulation calls for the addition of some of synthetic rubber compounds, these are added at the last step in the procedure and then the subsequent agitation must be kept at a minimum to keep the foam down.
14. If it is necessary to use foam killers or depressants, they are generally used just prior to screening.

When proteins are used as the adhesive, it is not necessary to stabilize the latex suspensions, however, when starch is used as the binder along with latex, we suggest that the latex be separately stabilized with a protein solution or one of the wetting agents which are so specifically designed.

In addition to the above series of items, other chemicals such as natural and synthetic gums are used to prevent so-called viscosity or orange peel patterns. Sizing agents are also used where it is necessary to have a small degree of water resistance.

***It is also an absolute necessity to have a suitable screening of the coating color prior to its use and also during its use. The vibrating screens do a good job on screening color preparation as well as the overflow from the size press.***

### Size Press Operation

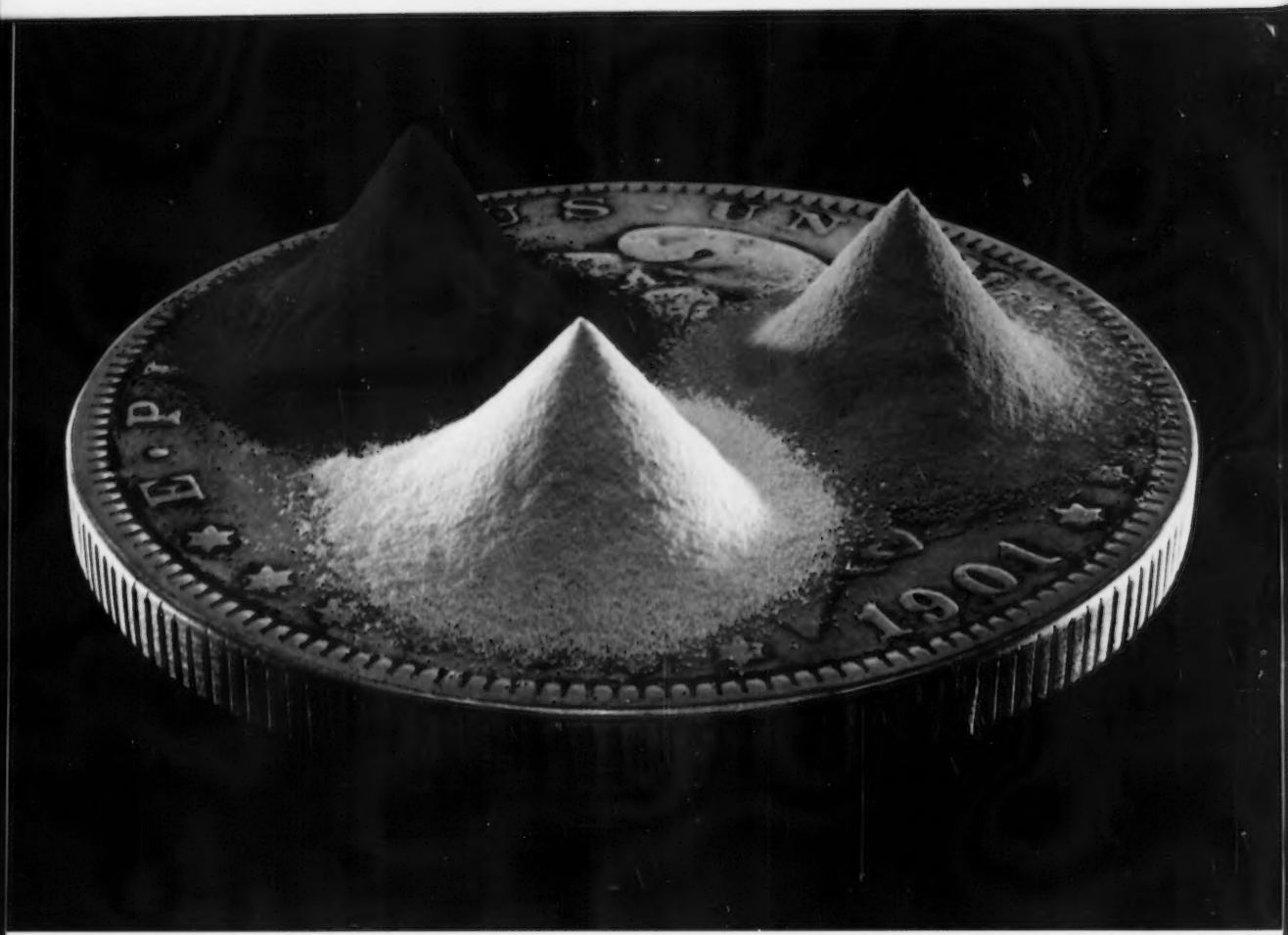
The amount of coating that we are attempting to put on the sheet with a conventional vertical size press varies from 4 to 6 pounds per ream per side. We find that the solids of our coating color must vary from 28 to 35 per cent to accomplish this.

For rolls in our vertical size presses, we prefer a bottom rubber roll of a P and J hardness of from 25 to 35 and for a top roll, a bone hard roll of brass or synthetic stone preferably one that can be doctored. One of the most important requisites is that the top roll be driven and this can be simply done with the slip belt arrangement off of the drive for the bottom roll.

After the size press it has sometimes been necessary to blow hot air against both sides of the sheet before coming into contact with the dryer rolls. It has also been necessary to have the dryer felts skip the receiving roll so as not to plug the dryer felt with coating color.

One other item which has been of much help is covering the spreader rolls. If these are rubber or metal, they should be wound with Teflon tape and driven. This tape defies any buildup of coating getting on to the surface of the paper from this point.

Now all of the above sounds quite simple and free of trouble, but don't be lulled to a false sense of customer acceptance with no problems as such is not apt to be the case. One can always encounter a printer who can make the coating dust off or wash off or abuse it in some diabolical way.




*Courtesy: The Glidden Company, Chemicals-Pigments-Metals Division*

# Alpha® Protein...

## for true colors, depth and clarity

There are at least ten potential trouble spots in the photograph above. Yet everything reproduced here with full integrity—thanks to Alpha Protein, the acknowledged best-selling binder for high solids, machine-coated offset papers.

Alpha Protein is processed soy protein, carefully controlled through all manufacturing steps to insure *uniformity* from shipment to shipment.

Unlike imported adhesive materials which are subject to price fluctuation, Alpha Protein is stable in price.

Alpha Protein gives excellent results in either conversion or on-machine coating. It is perfectly compatible with coating pigments and allows the application of coatings containing up to 60 percent or more solids.

Write for complete information.

**CENTRAL SOYA COMPANY, INC.**

**Chemurgy Division**

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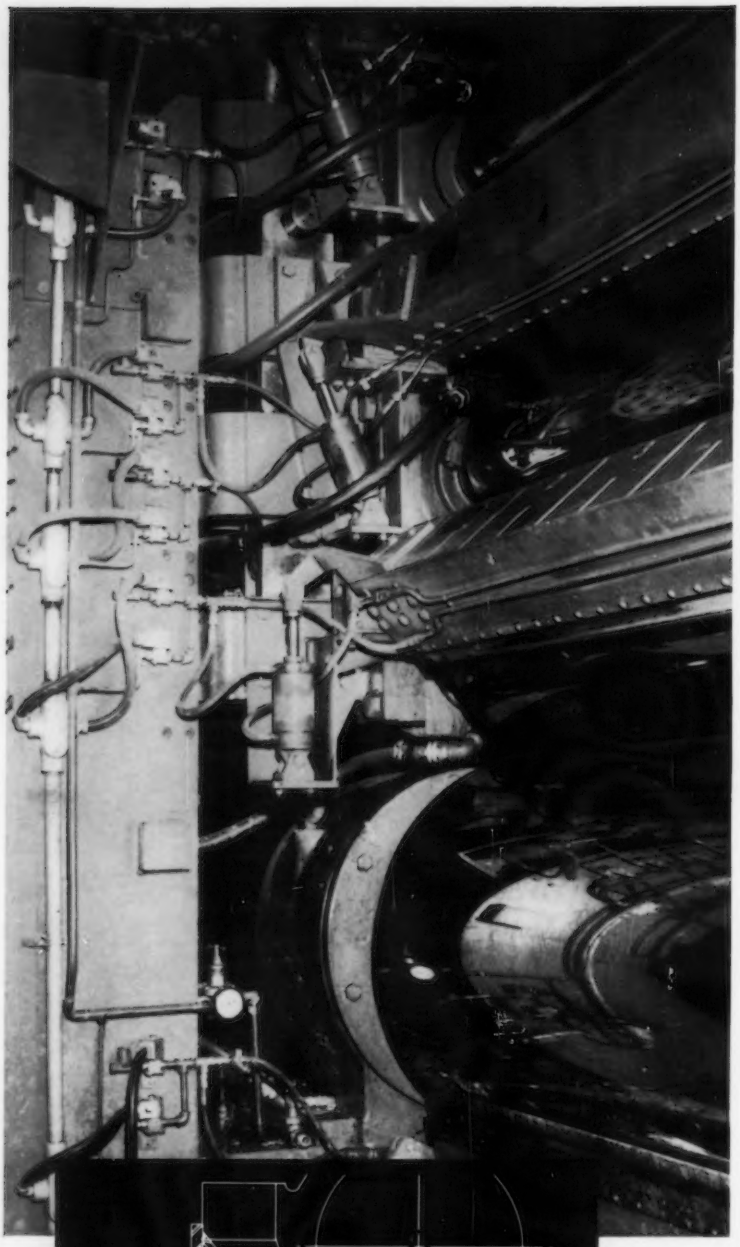
This advertisement reproduced on Alpha Protein-processed paper



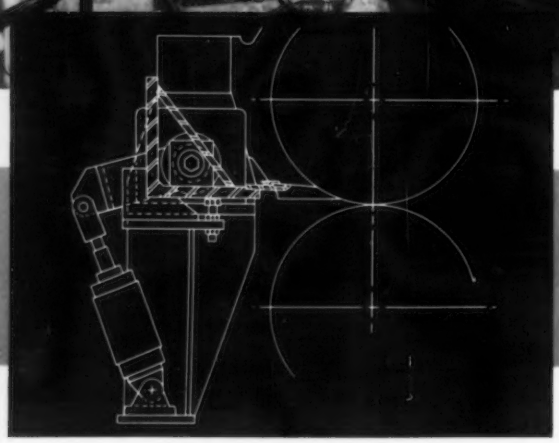
# Clean rolls and Lodding Doctors

CLEAN ROLLS go hand in hand with Lodding Doctors. Mills throughout the country and many abroad have found this to be so — just as in the installation of calender doctors at the Chillicothe Paper Company.

There's good reason for such universal reliance on Lodding. Most mills prefer to turn the intricate problems of doctoring over to specialists, where *each* doctor is custom engineered and precision built for *each* machine roll application.

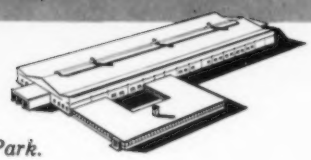
Calender rolls are among the most difficult to doctor properly, yet among the most important. Thirty years of specialized experience with thousands of calender doctor applications stand behind Lodding's ability to lick even the most exacting problems presented.

For example, Lodding Calender Doctors are designed for mounting on the roll bearing housings to enable the doctor to ride with the roll at all times. This provides constant, uniform blade pressure with perfect alignment to the axis the entire face length of the roll. Doctor backs are built to individual specifications to provide the necessary strength and rigidity and, among other factors, to compensate for the roll crown. Clean nips result, allowing a free course for the sheet.



*If proper calender doctoring — any other roll doctoring — is your goal, better specify Lodding.*

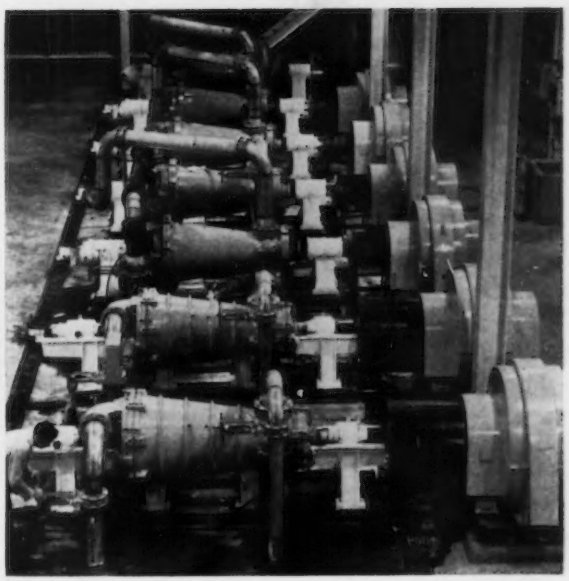
**LODDING**
*Engineering Corporation*
AUBURN, MASSACHUSETTS



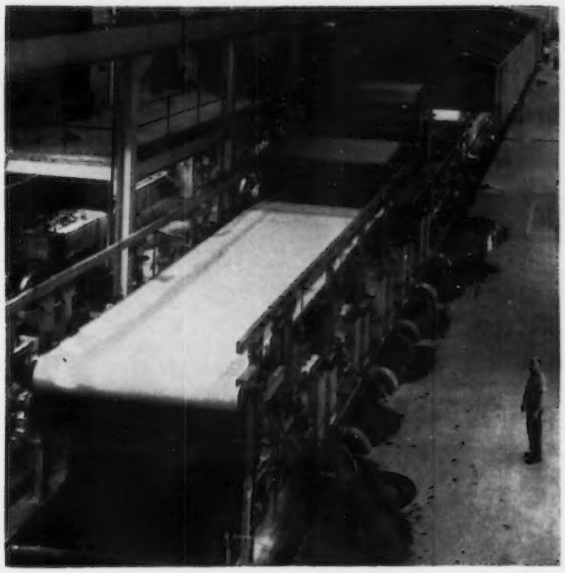
*We welcome your inspection of our new plant located in Worcester's Auburn Industrial Park.*

# Eastex Cylinder Machine Allows More Flexible Operation

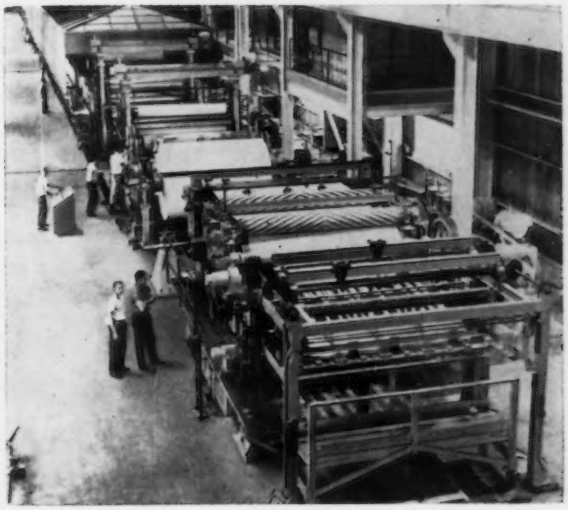
East Texas Pulp & Paper Co. recently began production on a five cylinder 110 inch board machine which has been transferred to its Evadale, Tex., mill from Southland Paper Mills. The machine is housed in a new concrete, structural steel and transite building, 50 feet by 750 feet, which is located parallel to the mill's No. 1 fourdrinier machine room. Producing converting cylinder board grades, the flexibility of this relatively small machine will enable Eastex to meet customers' specifications for specialized grades.



Stock-preparation equipment includes eight jordans and two separate stock systems which will process pulp for the manufacture of various types of full bleach, bleach lined, and double-bleach lined board.

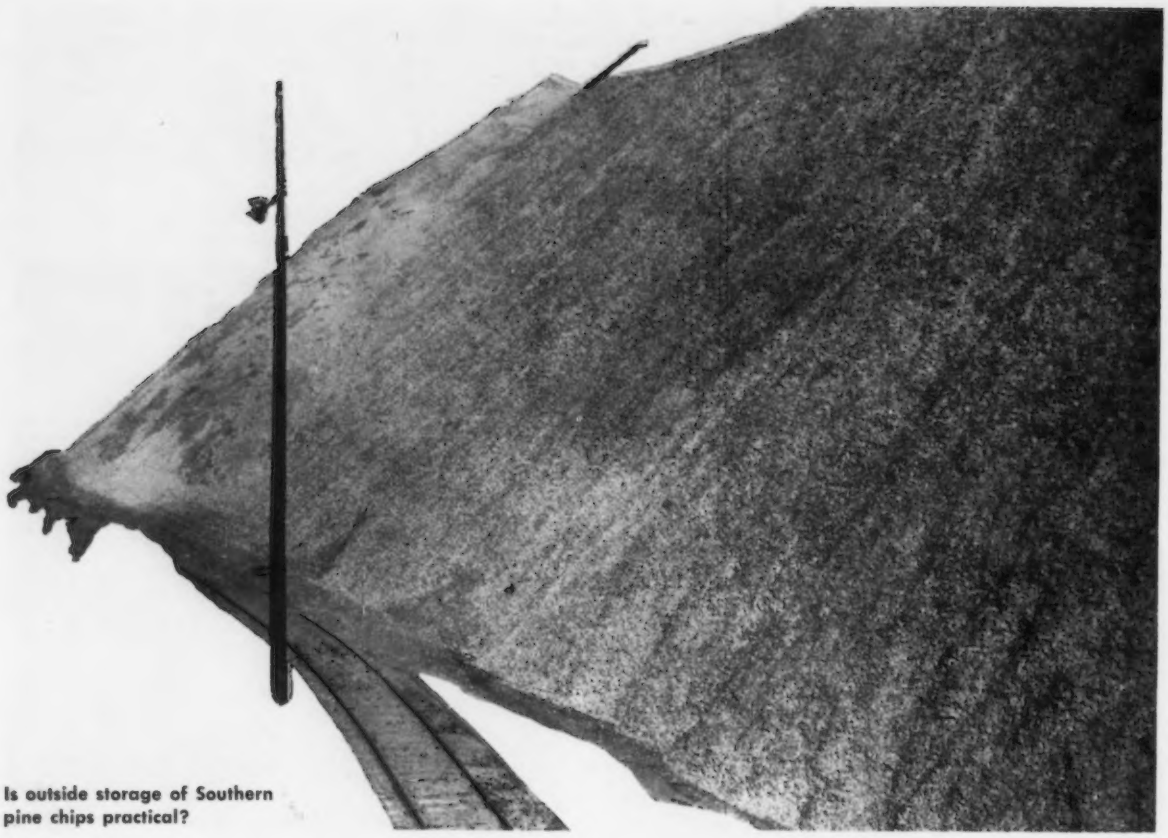


Wet end view showing the five cylinder, 110-inch machine. In its new location, the machine produces 80 tons per day of board, ranging in caliber from .013 to .040 inches.



For a compact and integrated operation, backstand, rewinder, cutter, sheeter and automatic layboy are in production-line position with the machine.

President Buckley (right) and Sales Vice President Morian.



Is outside storage of Southern pine chips practical?

# A Panorama of the Residue Chip Recovery Program in the South

**From its 1952 infancy, the South's utilization of wastewood chips cascaded to 374,000 cords in 1955, then to 1.7 million cords in 1958. Will further progress recover an estimated maximum of 2.7 million cords in 19?**

**T. N. Baker,**
St. Regis Paper Co.

The chip program in the South is much younger than here on the West Coast and the first shipment of sawmill chips was not made until 1952. This movement was the result of several stimuli: (1) the lumbermen's desire for the profits of better utilization; (2) the papermaker's fear of a pulpwood shortage; and (3) the reports from a successful program under way in the West.

The appetite of the lumbermen for utilization of their wood residue had been sharpened during the second World War when several Southern paper mills purchased rough slabs to supplement their wood supply. No means were available for debarking these slabs and when paper quality was forced back up after the war, the use of this material was abandoned. But, the lumbermen had been awakened to the potential value of the fiber which had previously been burned.

The papermakers were contemplating rapid expansion and it appeared

From APA Technical Paper 58-P91, Presented at 12/58 meeting of Amer. Pulpwood Ass'n Western Technical Committee.

likely that pulpwood consumption would be ahead of the growth rate between the period of expansion and the first harvest cut from the planted forest.

Intensive forest management practices have been carried out for several years, but the first substantial increase in forest yield was still about 20 years away. Better utilization appeared to be an excellent way to avert the possibility of a shortage.

Lumbermen and papermakers alike had been encouraged by the chip bonanza in the West to a point of action.

## The Spark of Ignition

All of the ingredients necessary for a chip program were present except one, an economical means of bark removal which was needed to spark the program. Reports came from Sweden in 1950 that a mechanical debarker, the Andersson, in operation there, might be suited to the mills of the South. Early in 1951 some Southern lumbermen sent pine logs from Chapman, Ala., to Sweden, and went along to observe their debarking. The results were promising.

Southern Lumber Co. at Warren, Ark., in conjunction with International Paper Co.'s Springhill mill, installed the first chip recovery system in the South. The operation consisted of the Andersson log debarker, a chipper and chip screen, all of which were manufactured by Soderhamn Machine Manufacturing Co. Southern Lumber began chip shipments in 1952. The second sawmill entered the South's infant chip program in Feb., 1953. This was W. T. Smith Lumber Co. at Chapman, Ala., which also installed Soderhamn equipment including the Andersson debarker. Smith's chips were shipped by rail to St. Regis Paper Co. at Pensacola, Fla.

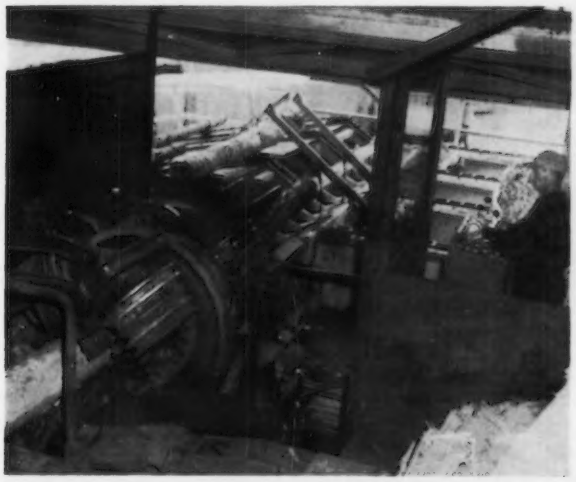
The field of waste wood utilization was now open in the South. However, most lumbermen were sceptical of its value in their operations and most papermakers were reluctant to accept chips from outside manufacturers.

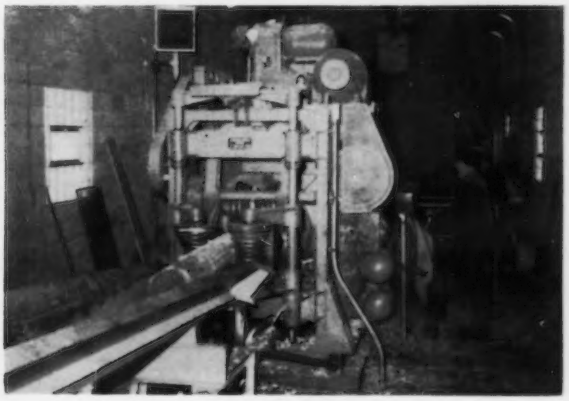
## Recovery Has Teenage Troubles

The work began, first, to find if a chip of high quality could be made from pieces of wood so small and with such a myriad of shapes as those found in the residue of a Southern sawmill. Many experiments were conducted. St. Regis studied chippers of various types with various feeds, analyzing their production under given circumstances and concluded that the proper machine operated correctly could produce excellent chips from this material.

The second point of attack was the bark content of chips; hence, bark removal. The St. Regis pulpmill gave chip procurement specifications for purchased chips that allowed only one-tenth of one per cent bark. Chip procurement died—almost. The vio-

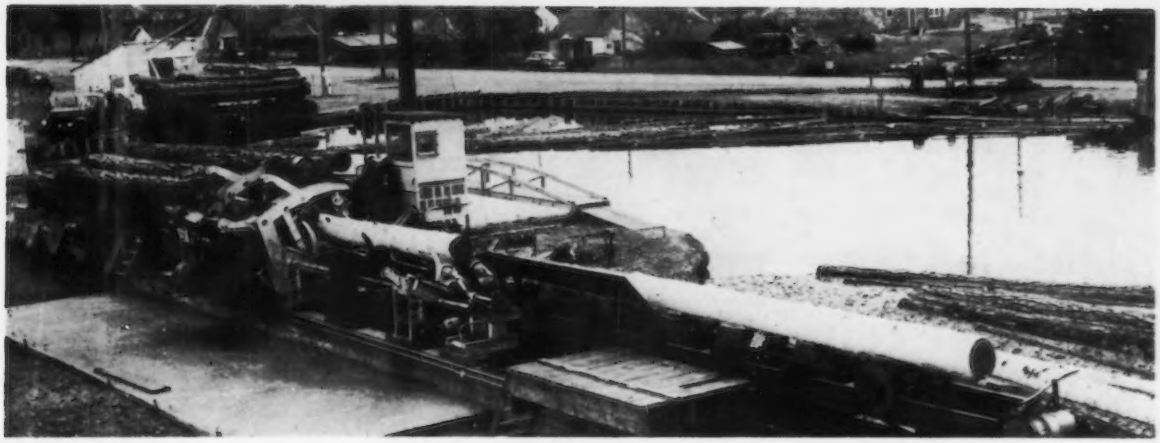
Nicholson debarker

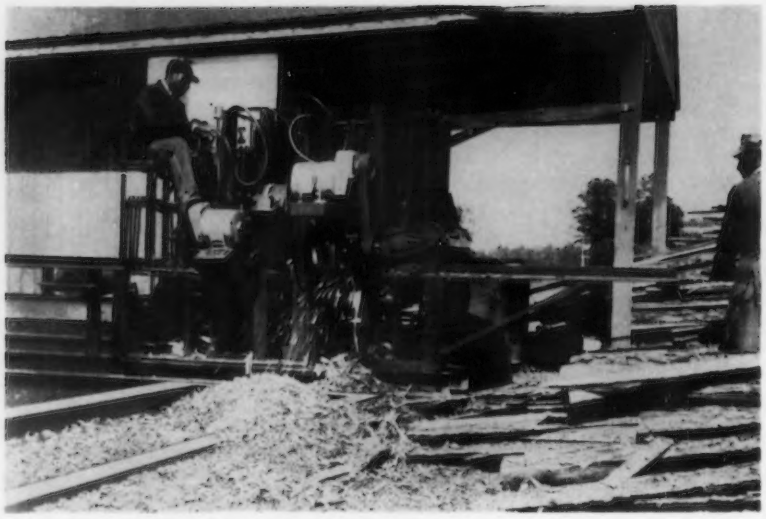




Soderhamn's Andersson debarker

Burnt River mechanical debarker





**Slab debarkers move into the spotlight.**

lent struggle that ensued produced a workable bark allowance of less than one per cent by weight, oven dry basis. Everyone looked for barkers that would do a better job than the Andersson and that would have a wider application by virtue of a lower installed cost. Many mills that could justify the cost of the Andersson debarker entered the chip field. Soderhamn developed the D-3 flail-chain debarker at one-third the price of the Andersson. Dargan Lumber Co. at Conway, S. C., installed the first D-3. Other machinery manufacturers became aware of the debarker market and offered pole peelers, post peelers and developed some new machines. The Hurrical cutterhead debarker was installed at several mills and Nicholson's 30 inch rotobarker became a popular machine. These developments with the experience of the previous installations made it practical to recover waste wood from mills of 35,000 board feet daily production and larger. But, about 75 per cent of the lumber in the South is produced in mills cutting less than 35,000 feet board measure, which left more than three-quarters of the waste wood unrecoverable.

The South at this point had been in the chips for three and one-half years; it was the end of 1955 and chip volume had grown from nothing in 1951 to 374,000 cords per year, two per cent of the wood fiber consumed for pulp in the area.

New debarkers opened the door for mills down to 20,000 feet daily production.

Nicholson offered the 26 inch Rotobarker and Soderhamn developed the Cambio.

## Trials of Transport

Transportation became a problem. The box cars used up to now were difficult and expensive to load and unload. Chip suppliers reported an average preparation cost on box cars of $5.00 per car loading. Unloading by car scoop and driver was slow, approximately 40 cords per eight-hour man day. Masonite Corp. at Laurel, Miss., and St. Regis Paper Co. at Pensacola, Fla., installed pits for dumping hopper bottom chip cars and embarked on a program to get the railroads to supply hopper bottom equipment of 20-cord capacity or greater that could be assigned exclusively to chip service.

This type car increased the chip unloading rate to 450 cords per eight hour man day. The Southwestern and Southeastern Technical Committees of the APA adopted the 20-cord hopper car with 35° slope sheets as a standard car for chip use. They requested the Southern Paper Manufacturers Traffic Conference to advise the railroad of their action and to negotiate for an adequate car supply.

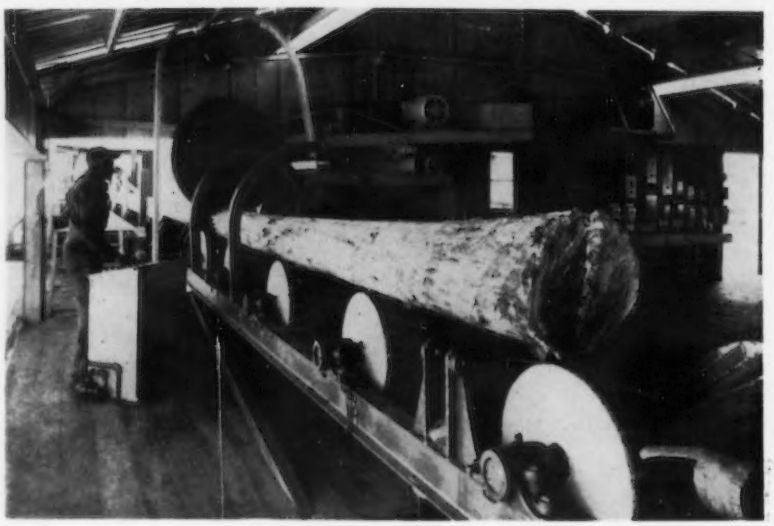
## Rise of the Slab Debarkers

At about this stage, slab debarkers took the spotlight. The smaller mills supplied the rough slabs to a concentration yard that debarked, chipped, screened and loaded the material. Mechanical and hydraulic debarkers were put into service; the cost of hydraulic slab debarking limited its use to two installations. Some of these concentration yards succeeded and still operate. Others failed and discouraged the pursuit of this as a desirable method of wood recovery. The slab debarkers moved into a new role. Waste wood could be recovered from the small surrounding mills by using the slab debarker at a mill already in the chip program.

## Smaller Debarkers Developed

The mills producing from 7 to 15,000 board feet per day were still not satisfied. They wanted the benefits of clean logs in their mill and the ability to recover all of their wood waste instead of just the better slabs and edgings. Jackson Industries, Inc., developed the Little Beaver rosser head debarker and simultaneously Fulghum Industries marketed a simi-

**Cut-off saw at St. Regis' Fargo mill selects portions of tree-length logs for the wisest use and lowest cost.**



lar machine. These log roller, rosser head machines were simple in design and economically priced. This barker development was accompanied by the addition of a new ring type debarker, the Mullis Log Skinner which undersells other ring type debarkers.

### Engulfs Other Waste-Woods

The chip program has touched on other sources of wood fiber besides sawmill residue. One item currently drawing interest is recovery of wood fiber from the pre-commercial thinnings of plantations. Several debarkers have been developed for this purpose; one by Fulghum Industries, one by Jackson Industries and one by Soderhamn Machine Manufacturing. These stems are cut from thick stands to offer growing room for the remaining stock and range from one to four inches in diameter. This size demands a phenomenal debarker — feed speed to make its handling economical even to the smallest producer. These stems after debarking are chipped at the nearest sawmill or slab concentration yard, with the debarker in the field or at the chipper. This practice may or may not become an important source of wood chips in the future program, but an answer should be soon in coming because of the activity in this field.

Another source of residue chips is from the chipping of roundwood at concentration yards and sawmills. This practice is not in wide use but it is done in several instances. W. T. Smith Lumber Co. has adopted a program in which hardwood is logged from their forests along with the pine.

The hardwood logs are run on a separate shift, the best cuts are set aside for veneer use, the best sawlogs are cut into lumber, the next lower grade log is cut into railroad cross ties and the pulp grade logs are broken down and chipped. Wetumpka Wood Products, a slab concentration yard, also chips pulp grade hardwood logs after peeling in a small Cambio debarker.

Still another source is represented by the chip mill put into operation early this year by St. Regis Paper Co., at Fargo, Ga. In an effort to mechanize the woods operation and reduce cost, logging consists of a single pass operation that delivers all forest products to the chip mill in tree length.

After debarking, the logs pass a cut-off saw that allows trimming of poles, the selection of saw log material and the cutting off of oversized portions of pulp grade logs. The pulp logs that will enter the 19½ inch chipper spout pass across the sorting conveyor and into the horizontally fed chipper in tree lengths. Less than three per cent of the pulp logs require any breakdown. The chips from this operation, 75,000 cords per year based on 80 hours' operation per week, are delivered to St. Regis' Jacksonville mill by hopper bottom railroad car. (for a description of the operation, see PTJ, July 21, 1958—Ed.).

### Utilization To ???

Summarizing the progress and looking into the future, the South's chip program produced 1,203,000 cords of chips in 1957 or six per cent of its pulp fiber requirement. However, there are many unanswered questions still ahead of this program: (1) is outside storage of Southern pine chips practical? (2) how to cope with mounting transportation problems? (3) how to economically recover fiber at the smallest Southern mills? These and many other questions must be answered before the chip program can reach the 2.7 million cord rate that has been estimated as a maximum recovery from Southern lumber operations.

# Want a Non-Skid Surface?

# Try Pattern Embossing of the Paper

A new economical, non-skid paper surface recently developed by Armour Research Foundation of the Illinois Institute of Technology promises to solve many problems confronting industries and businesses using or handling paper bags.

Developed for The Cromwell Paper Co., of Chicago, the non-skid surface is embossed on the paper. The embossing reportedly increases the coefficient of friction by several hundred per cent. This means that warehousemen and dealers can make higher stacks of bagged products such as cement and livestock feeds without the usual slippage problem encountered with smooth paper bags.

### Less Expensive

The paper can also be used for wrapping with the same non-skid advantages.

For the shipper and buyer, this means bags or wrapping material made of the embossed paper will hold up better and will undergo less movement in shipment. But most of all, the new embossed paper is less expensive than other non-slip papers that are coated with either plastics or resins. This is of particular importance to those firms using bags or wrapping material in great quantities.

The Cromwell Paper Co. experimented with an embossing pattern of its own which increased the coefficient of friction by approximately 40 per cent. It was thought, however, that surface friction could be increased even more with different embossing patterns.

Testing of papers and development of various single and double embossing patterns led ARF scientists to what is considered the optimum embossed pattern for paper giving the highest amount of surface friction without sacrificing its necessary physical properties. That pattern is the 3/32-inch double-embossed pattern with interlocking square elements. Research also showed that impact strength was increased.

Although originally developed for bags, the new paper was found to be particularly useful in wrapping steel for shipment. The paper's uniform flexibility and improved impact strength are the advantages in this application.

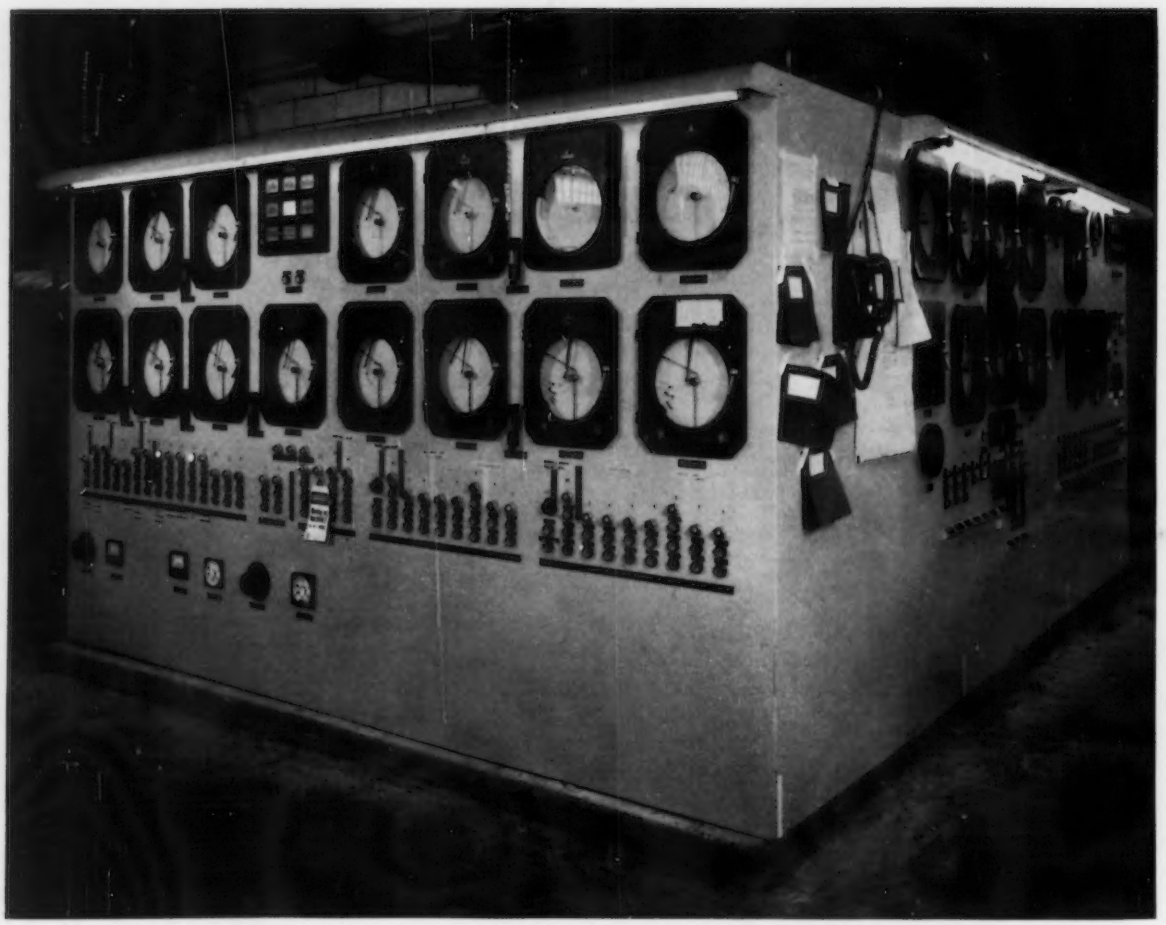
Embossed paper bags can be used in packaging and shipping such products as livestock feeds, fertilizers, dry chemicals, food products, seeds, cement, plaster, and other building materials.

### Several Advantages

Higher stacks utilizing the bag's non-skid surface, less movement in shipment, easier grasp for the loader, and greater strength are the reported advantages. Cost is greatly reduced compared with the use of chemical or resin-treated bags, it was pointed out.

Another factor—this one of aesthetic value—was discovered when printing was combined with the embossing pattern. The result was a three-dimensional effect.

# Finch, Pruyn produces higher quality paper at lower operating costs



*Unique, L-shaped Taylor instrument panel has Refining, Screening and Brown Stock Washing controls on left. Digester Process control on right.*

**Taylor Instruments**

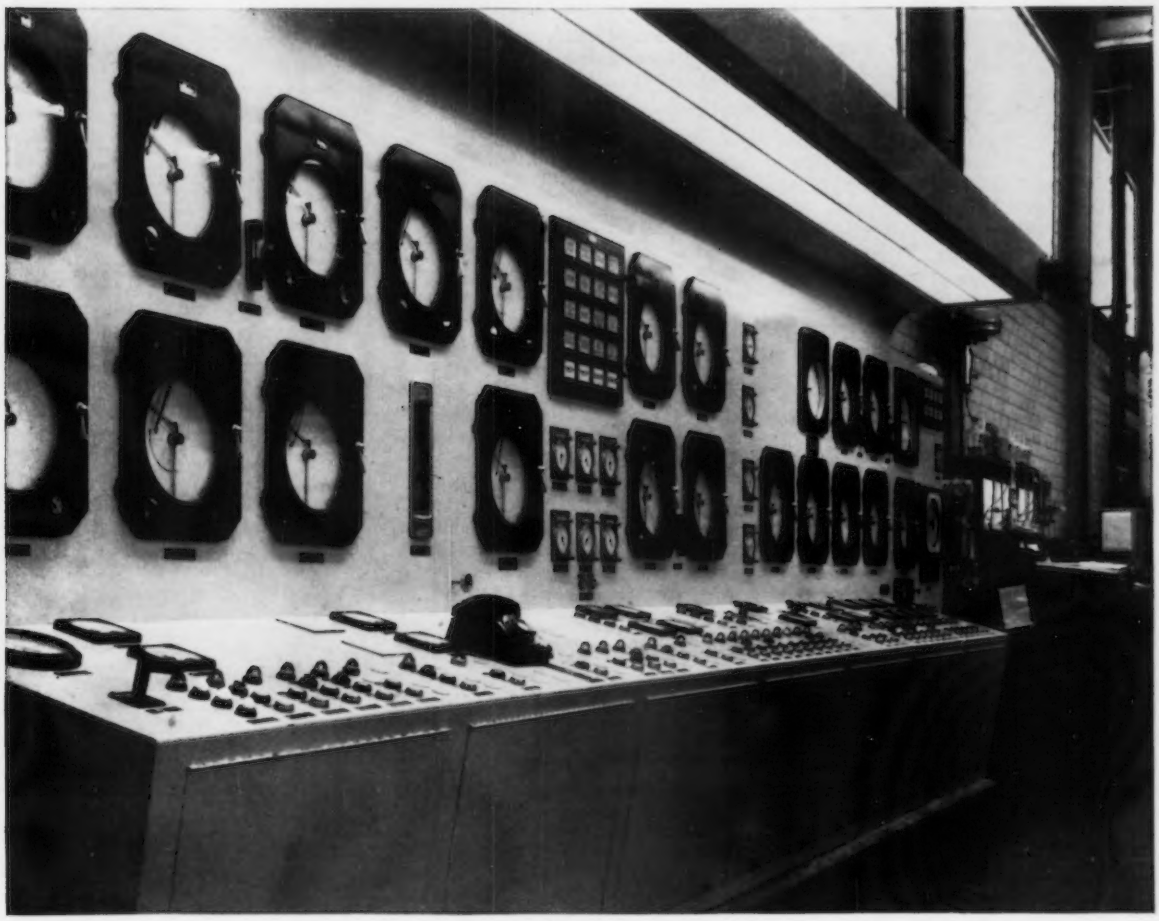
# Taylor Automatic Control Pays Off!

A higher quality paper at lower operating costs was the goal of Finch, Pruyn & Co., Inc., when they built their new neutral sulphite pulp mill at Glens Falls, N. Y. Designed to manufacture hardwood pulp for use in the production of high strength, high brightness and economically priced printing and converting papers, the new mill utilizes automatic controls at every possible stage. As a result of previous experience, Finch, Pruyn chose Taylor instrumentation throughout the mill. So well instrumented is this new mill that it requires only a foreman and three operating personnel for each shift. The instrument man and pulp mill superintendent are present on the day shift only.

Designed and engineered by Chas. T. Main, Inc., the new mill produces between 70 and 100 tons of hardwood pulp per day. It is expected that the output will eventually reach 140-150 tons daily.

Here's another example of a complete pulp mill under Taylor control . . . and of a very satisfied Taylor customer.

If you're thinking of modernizing existing plant, or of building a new one, it will pay to call in your Taylor Field Engineer in the early planning stages. Or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Ontario.



*Taylor control panel for the three stage bleaching operation at Finch, Pruyn's new Glens Falls mill.*

**MEAN ACCURACY FIRST**

# Considerations in the Distribution of Lubricant to Dryer Bearings and Gears

**Glenn F. Wright,**
Staff Engineer—Lubrication,
Paper Machine Division,
The Black-Clawson Co., Inc.,
Watertown, N. Y.

The modern paper machine presents maintenance and operating problems far more complex than those prevalent a few years ago. Increased machine speeds and drying capacities, enclosed dryer gearing, and anti-friction dryer bearings have been major factors in the rapid development of the paper machine; culminating in industrial giants capable of producing paper in 25 foot wide rolls at speeds approaching one-half mile per minute. Further complicating the design of such machines is the ever increasing field of uses for paper demanding extremely accurate caliper, moisture content, formation, density, and strength.

Down time is, therefore, even more costly than in the past. Replacement costs of machine parts are much higher. The rapid growth of the paper industry has created a shortage of experienced operators and mechanics; a major cause of rising maintenance and repair costs.

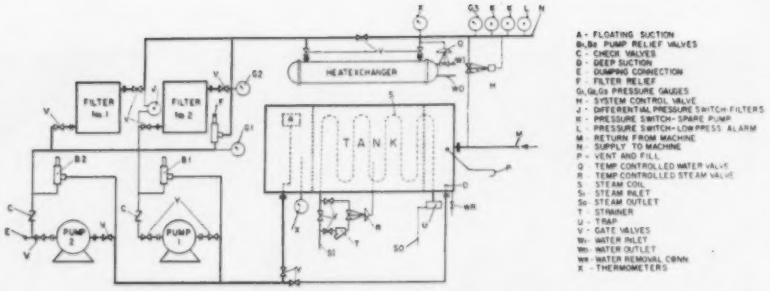

HEATEXCHANGER
FILTER No. 1
FILTER No. 2
TANK
PUMP 2
PUMP 1
A - FLOATING SUCTION
B,Bx PUMP RELIEF VALVES
C - CHECK VALVES
D - DEEP SUCTION
E - DUMPING CONNECTION
F - FILTER RELIEF
G, G1, G2 PRESSURE GAUGES
H - SYSTEM CONTROL VALVE
J - DIFFERENTIAL PRESSURE SWITCH-FILTERS
K - PRESSURE SWITCH- SPARE PUMP
L - PRESSURE SWITCH- LOW PRESS. ALARM
M - RETURN FROM MACHINE
N - SUPPLY TO MACHINE
P - VENT AND FILL
Q - TEMP CONTROLLED WATER VALVE
R - TEMP CONTROLLED STEAM VALVE
S - STEAM COIL
Si - STEAM INLET
So - STEAM OUTLET
T - STRAINER
U - TRAP
V - GATE VALVES
Wi - WATER INLET
Wo - WATER OUTLET
Wr - WATER REMOVAL CONN
X - THERMOMETERS

**Figure 1: Schematic arrangement of a lubricant circulating and recovery system indicating the relative positions of the essential equipment.**

## How Can Production Loss Be Effectively Reduced?

After a machine has reached peak production, and operators are fully acquainted with its operation, the majority of down time is primarily caused by mechanical or electrical failure. A designer must constantly seek ways to minimize possible mechanical failure. For this reason, machine lubrication has become one of the focal points of design. Efficient application of the proper lubricant can substantially reduce mechanical failure. The old "block grease and oil can" methods no longer suffice.

## Circulation And Recovery

The basic equipment of all circulating systems is the same. The requirements are dictated by the lubrication requirements of the machine and the protection which must be provided for the oil. Some systems have optional equipment which will provide for automatic pump alternation.

The circulating system now in general use for dry end lubrication is the same as that used for turbine lubrication for many years. Oil is maintained in a reservoir. From the reservoir oil is pumped to the various points of application where the correct amount is metered through flow valves or orifices to bearings and gears. From the bearing housings and gear cases, the oil is re-

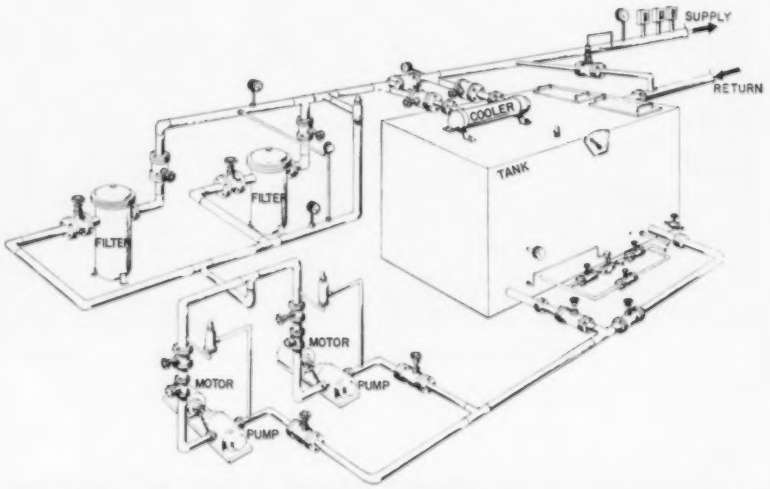



**Figure 2: A typical oil cellar showing optional cooler installed. Note isolating valves for pumps, filters, and heat exchanger.**

turned to the tank. Such systems, in addition to providing for oil distribution, also provide for clarification of the oil.

### Basic Equipment

A tank provides an oil reservoir and, when properly designed, promotes contaminant removal from the oil supply. Pumps are provided to deliver the oil to the points of lubrication. Filters are provided to further clarify the oil and remove any particles remaining in the oil which might be injurious to bearings or gears. A heat exchanger is considered optional. However, for some locations and conditions of operation it is indispensable. Figure 1 is a schematic drawing showing the relative positions of the various pieces of equipment. In addition to the oil cellar equipment, metering devices are furnished at each point of lubrication. These are usually a form of needle valve with means for visually checking oil flow through the valve.

### Choice and Design

Several factors should be studied when choosing lubrication facilities for a machine. Those listed here are of a general nature and are universal in their application.

1. The type of bearings in the machine.
2. The dryer gear requirements.
3. Machine speed.
4. Dryer steam temperatures.
5. Ambient conditions of heat, dust and moisture.
6. Types of oil to be used.

Of special interest in new installations are:

7. Possible future machine expansion.
8. Standardization of controls and mechanical components with those furnished with the machine.

For rebuilding a machine there are other important considerations such as:

9. Space limitations.
10. Ease of installation and compatability with existing bearing and gear housings.
11. Budget limitations.

When modernizing a machine, bearings, gears, speed, temperatures and ambient conditions must be considered. However, initial equipment and installation costs may actually be the larger part of the entire job cost. The size of new equipment is also crucial when installation will be in areas already overcrowded with equipment.

When designing a new machine installation, oil cellar equipment costs and space requirements are sometimes overshadowed by other considerations. Planning todays machines for expansion at some future date is becoming an important consideration in modern design. Automation has invaded the paper mill. Machine safety devices are being designed to protect equipment against both mechanical failure and human negligence. The lubrication system must keep step with these concepts of design.

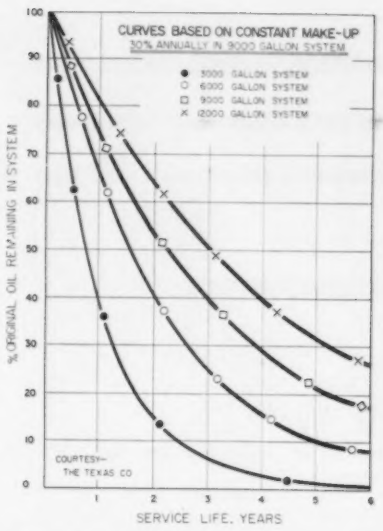



**Figure 3: Constant replacement of circulating oil tends to lengthen the overall oil service life, as shown in this graph.**

### A "For Instance" of Design

The four phases of oil flow in the circulating and recovery system are: (1) recovery, (2) pumping, (3) filtration, and (4) distribution.

Figure 2 is a representative design of a lubricant system; here, each of these major phases is a sub-design.

Actually the components available may be combined to form 10 systems which cover a capacity range from 5 to 130 g.p.m. For comparison purposes, a machine with 40 dryers, 6 felt dryers, 8 calender rolls, and enclosed dryer gears, would require 62 g.p.m. of oil. A machine with 50 dryers, 8 felt dryers, 16 calender rolls, and enclosed dryer gears, would require 80 g.p.m. of oil. One eight roll calender stack, however, would require only 7 g.p.m. of oil.

#### STORAGE AND RECOVERY TANK

Oil flow through tank is controlled and without agitation. Long oil and filter life is assured by consideration of design items such as:

1. Sufficient retention time for oil recovery. A balance has been reached whereby sufficient retention provides maximum oil protection for a one-tank system. At the same time make-up oil is a large percentage of the total oil supplied. The addition of new oil tends to lengthen the life of the oil already in the system. The importance of this ratio is shown by the curves in Figure 3.

2. Proper use of screens and baffles. Screens and baffles in the dirty oil inlet chamber insure removal of large particles of solid contaminant from the oil supply while helping to maintain a cleaner tank bottom. Baffling for proper through-tank flow control was designed into the system to promote conditions most conductive to contaminant removal. The tank is illustrated in Figure 4, and the use of baffles and screens to control flows through the tank can be seen in this diagram.

3. Tank temperature control. Accurate control of the temperature of the oil in the tank promotes separa-

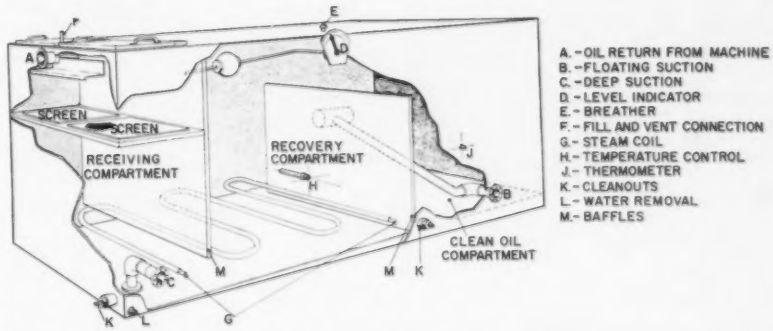



**Figure 4: Cutaway of storage and recovery tank. Note the use of screens and baffles to control flows through the tank .(Black-Clawson Co., Inc.)**

line from the manifold is controlled by a needle valve gauge.

#### VALVES AND GAUGES

A vented bulls-eye valve is standard for dryer bearing and gear supply. A pressure-type flow indicator may be used on the calender stacks. These valves have been chosen on the basis of the least number of moving parts and the least amount of required maintenance. The use of pressure valves on the calenders allows the flow control to be installed within easy reach of the operating floor and eliminates climbing the frame to make adjustments. These two types of valves are illustrated in Figures 8 and 9. Pressure type valves are recommended for machines which are to have totally enclosed dryer sections. Their use enables maintenance personnel to check oil flow and make valve adjustments from the operating floor without entering the hood.

Figure 8: Gravity-type sight feed needle valve used on dryer bearings and gears.

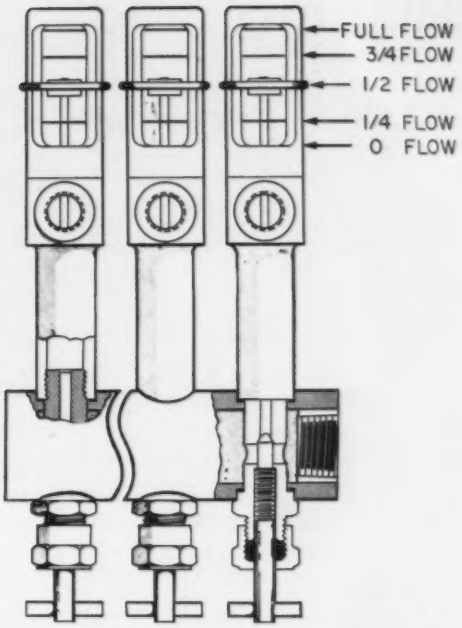



Figure 9: Sight feed needle valve used for pressure-lubricating calender bearings and enclosed dryer section bearings and gears.

### System Maintenance

In designing a circulating system, maintenance procedures may be simplified by providing:

1. Isolation of individual pumps, filters and cooler.
2. Leak proof, well-type sockets for temperature control bulbs and thermometers.
3. Standard control components interchangable with machine control system.
4. Self powered temperature controlled valves which require no electrical connections.
5. Adequate visual and audible indicators which provide maintenance with a constant check on the operating conditions of the system.
6. A single source of supply for all repair or spare parts.

### Conclusion

Much care should be exercised in selecting a lubricating system for dry end bearings and gears. Proper analysis of machine requirements, operating conditions, and budget restrictions can mean substantial savings in initial investment, machine maintenance, and production loss resulting from excessive down time. Engineering from the oil cellar to each individual bearing or gear is "production schedule insurance".

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## PJT NEW LITERATURE

**Combustion Control for Stoker-Fired Boilers**

Gives diagrammatics of typical combustion control systems as applied to stoker-fired boilers. Also covers both chain-grate and spreader type stokers, along with a discussion of steam pressure and steam flow-air flow measurement. Bulletin 515. Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio.

**Masterplate Concrete Floors**

Discusses the major features sought in the design of any industrial floor subject to heavy use and explains how Masterplate lasts six times longer than ordinary concrete floors. Complete photos, diagrams and detailed explanations cover the method of installation and actual facilities where they are now in service. Bulletin MP-4d. Master Builders Co., Cleveland 3, Ohio.

**Microflo Auto-Pneumatic Pulsafeeder**

Describes this new unit which is a controlled volume pump that meters fluids at "micro" flow rates in response to automatic signals from pneumatic control instruments. Models LS-10-APR and LS-20-APR are available. Bulletin 500-A. Process Equipment Div., Lapp Insulator Co., Inc., 102 Hall St., LeRoy, N. Y.

**Sandy Hill Dryers and Dryer Sections**

Illustrates and describes testing, production and performance of these paper machine dryers. Brochure. Sandy Hill Iron & Brass Works, Hudson Falls, N. Y.

**Instruments for Rent**

Discusses scope of nationwide instrument rental program and other pertinent factors. Bulletin GEA-6829. General Electric Co., One River Rd., Schenectady 5, N. Y.

**Manufacture, Operation and Maintenance of Felts**

This manual on paper machine felts has been under preparation for three years and provides valuable data on the proper installation and operation of felts; synthetics and chemical treatments; washing techniques; felt damage and its control; and the care of felts in storage and in operation. Albany Felt Co., Albany 1, N. Y.

**Package Deaerators**

Describes new line of Permutit deaerators, complete with accessories and packaged for immediate shipment from stock. Bulletin 4528. Permutit Co., 50 W. 44th St., New York 36, N. Y.

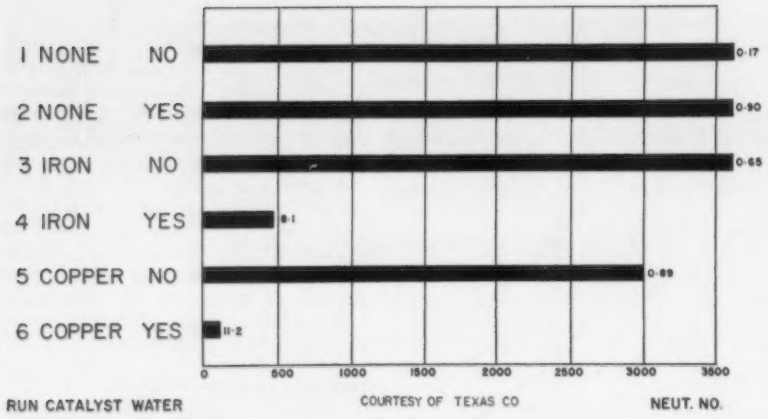



**Figure 5: The effect of catalysts (contaminants) on oxidation rate of oil. (150 ssu visc. at 100°F turbine grade, 200°F, pure oxygen.)**

tion of water and oil without damaging the oil. A sloping tank bottom and a water outlet facilitates water removal.

#### CONTAMINATION AND OIL LIFE

Great care should be exercised in the design of tanks so the oil in the tank can be kept as free of contamination as possible. The result of contamination is illustrated in the bar graph shown in Figure 5. The contaminants indicated on this graph—water, iron, and copper are at once recognized as being especially prevalent around paper machines. The neutralization number is a measure of acidity and, since the products of oil oxidation are acid, is also a measure of oil deterioration.

#### PUMPS

The selection of pumps is based on performance in existing field installations, these are screw type positive displacement pumps with a history of maintenance free operation under very severe conditions. Figure 6 is a cut-away view of the pump. Two pumps may be furnished, providing a standby in case of sudden pressure drop. Should a leak develop and line pressure decrease, the standby pump will automatically start and maintain a safe pressure. Should the start of the second pump not raise the pressure to a safe level then an audible alarm sounds indicating dangerous operating conditions. The start of the spare pump is also indicated by an alarm, alerting maintenance to possible trouble in the system. Should an overload, such as bad motor bearings, cause the normally operating pump to stop, the standby pump will start and continue uninterrupted service. If the low pressure alarm is manually silenced, it must be reset before the pumps will run. The audible alarm can be individual with the lubricating system or can be common with the regular machine "howler" with an indicating light showing the lubrication system as the cause of the alarm.

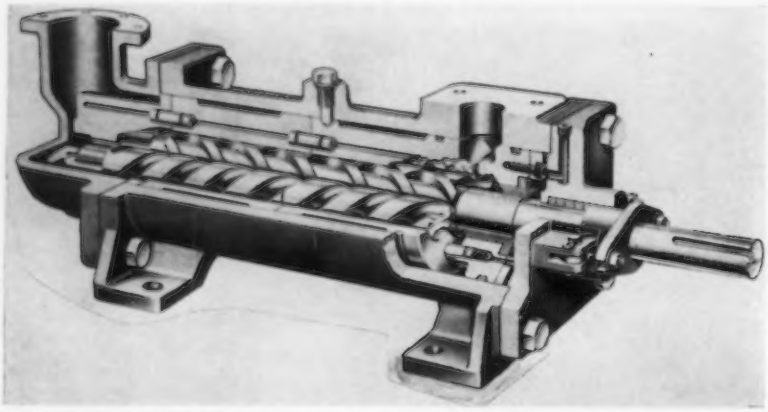


**Figure 6: DeLaval IMO screw-type positive displacement pumps are capable of operating at speeds up to 3500 revolutions per minute.**

#### FILTERS

Filters have been carefully selected from actual performance data to insure maximum protection both for the machine and the oil. In this system, filtration is accomplished by forcing the entire flow of oil through surface-type medium designed to remove about 98 per cent of all particles 25 microns large. For comparison purposes, 25 microns is approximately 0.00098 inch. The smallest particle discernable by the average unaided human eye is 30 microns. The filter element is made of paper manufactured under the strictest density control, and impregnated with a binder for strength and further control of particle size separation. This type of filter is pictured in Figure 7.

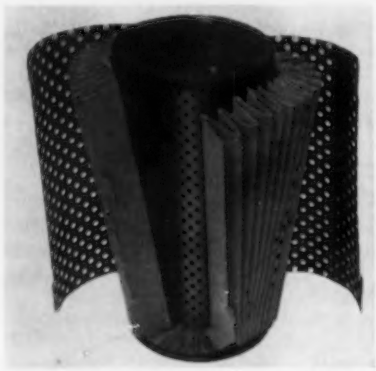


**Figure 7: A micronic oil filter cartridge. The filter medium is paper impregnated with a binder.**

#### HEAT EXCHANGER

The heat exchanger will accommodate total oil flow at less than 10 p.s.i. pressure drop. The machine requirements were carefully estimated before this equipment was added to the system. The heat exchanger package consists of the exchanger and a temperature-controlled water valve for the cooling water supply to the exchanger tubes.

#### HEADERS AND MANIFOLDS

Distributing clean oil to the exact location in the exact amount required is the prime function of the circulating system. Distribution is through two headers, one on each side of the machine. From these headers risers supply oil to manifolds which handle up to twelve points of application each. The flow through each feed

# Blandin Adds New Trailing Knife Coater And Chemi-Mechanical Pulp Mill

**The new coater is their second such installation and incorporates several interesting features. The pulp mill will supply part of Blandin's chemical pulp requirements and includes a new continuous digester.**

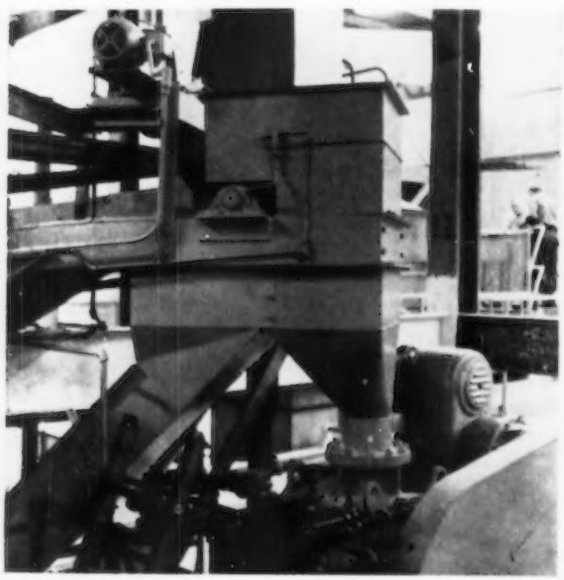
Trial runs are soon to begin on a new trailing knife coater at Blandin Paper Co. in Grand Rapids, Minn. The new off-machine unit, together with an existing coater will allow the firm to coat both sides of the mill's entire paper production. The coater is part of a four million dollar quality improvement program for Blandin.

The program also includes the addition of a chemi-mechanical pulp plant and a new office building to house accounting and administrative personnel. With a production of about 190 tons a day of publication grades of paper, Blandin plans on its new plant filling part of its demand for chemical pulp. The new process is designed for use of balsam which is in good local supply, and other species may also be used later.

### Two-side Coating

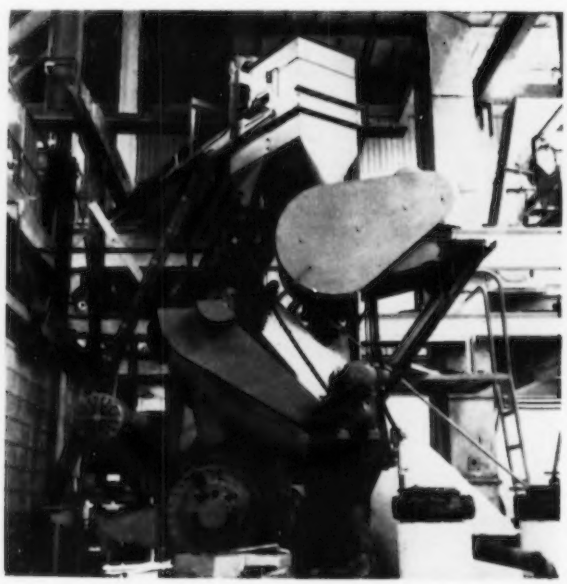
Blandin has had considerable experience in coating both sides of the web with the trailing knife coater. Their present off-machine coater, a Rice Barton machine, was installed in 1956 and brought into operation in early 1957. One hundred feet in overall length with a 120-inch face width, this coater normally runs at 1600-1700 f.p.m. It was one of the first installations of this type.

The new coater, like the old one, will coat both sides of the sheet, and is also an off-machine unit. The new unit, however, has a 160-inch coater face and is only 60 feet long. It is expected to be nearly twice as fast, operating at speeds up to 3000 f.p.m. The unit has an automatic roll changer, and it is planned to make splices at 2000 to 2500 f.p.m. Included in the coating installation are two Gardner dryers. Designed by Blandin and engineered by Central States Engineering, the new coater was built by Rice Barton. It is equipped with electronic controls and

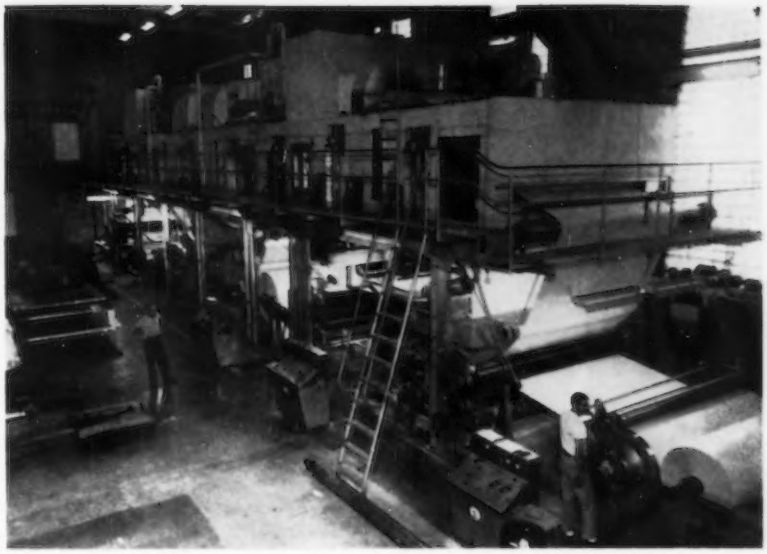


Closeup of chip feed to digester. Conveyor belt at upper left carries chips to hopper over digester.

Operating floor view shows top of the digester with chip feed above and discharge valve on the bottom side.



electric drive supplied by General Electric. Trial runs on the coater are scheduled to begin in the latter part of this month. In conjunction with the coater, a new 148-inch face supercalender and winder by Appleton Machine Co. were also installed. At the high speeds at which these coaters operate, they will handle all the machine production and allow time for clean-up and repairs.



First trailing knife coater (above) at Blandin was installed in 1956. This one is 120-inches wide, 100 feet long. New installation nearing completion is wider, 40 feet shorter and nearly twice as fast.

### New Pulping Installation

The chemi-mechanical pulp mill includes a Messing-Durkee continuous digester, built by Bauer, as is the refining and pulping equipment. Washing and bleaching equipment was supplied by Improved Machinery Co. Ahead of the chemi-mechanical system, Blandin has installed a D. J. Murray barker and chipper.

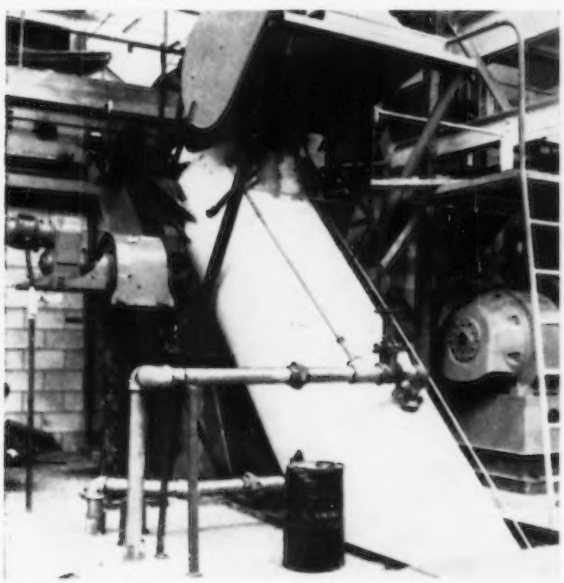
Chips are delivered from a large chip storage bin to a live bottom bin then by belt conveyor over a weighing unit to a special valve through which they are fed as required to the continuous digester. The three foot diameter digester is placed at a 45 degree angle and extends down through the operating floor into the basement. An internal conveyor carries the chips down the tube, then back up to be discharged through another four-way valve. Following the digester, the cooked chips go to a Pressafiner and then to three Bauer double disk refiners which may be operated in series or parallel. These are followed by a double disk finishing refiner. Capacity of the system is about 35-40 tons per day. Additional units of this type are planned as the process proves out.

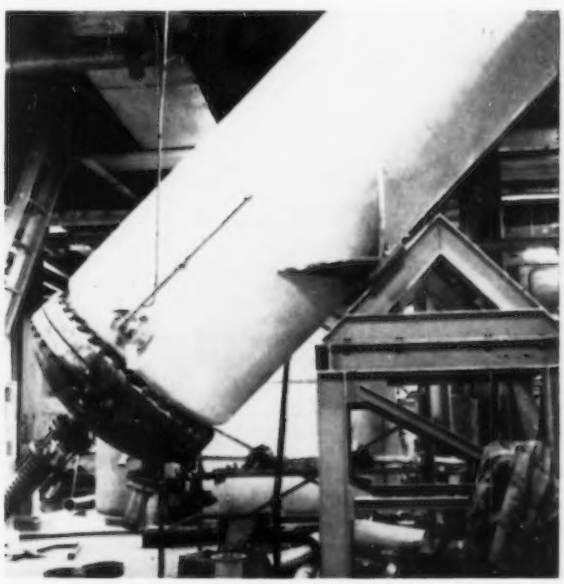
### Management

The man whose name the mill carries, C. K. Blandin, died last year at the age of 85. Management of the mill at Grand Rapids is the responsibility of the executors of his estate with the primary purpose being that of perpetuating the mill as a permanent and progressive industry within the community. Some of the proceeds of the mill go to the Blandin Foundation which was established in 1941 and is a major factor in the social and economic life of the community.

Active management of the company and its operations is in the hands of Myles-Reif, executive vice president; George W. Goelz, assistant general manager; Leo J. Thomas, treasurer; and Harold Zigmund, vice president in charge of manufacturing.

Continuous digester is set at 45 degree angle. Internal conveyor carries chips down full length of unit, then back up.





Lower end of digester extends into basement. System also includes refining, washing and bleaching equipment.

# PJT NEWS OF SUPPLIERS

J. W. Welch

L. G. Ward

**Huyck Felt Co.**, Division of F. C. Huyck and Sons, Rensselaer, N. Y., has further expanded its Felt Development Department by the addition of two research engineers, Lowell G. Ward and J. W. Welch.

Mr. Ward, a graduate of the University of Delaware, was employed for nine years as plant chemist for the Armstrong Cork Co., Fulton, N. Y. In this capacity he gained valuable technical and practical papermaking experience well suited to his duties at Huyck.

Mr. Welch joins Huyck after five years of papermaking experience with the Lee Paper Co., Vicksburg, Mich. A chemical engineering graduate from Yale University, he has also worked as a process development engineer for Esso Standard Oil Co.

**The Babcock & Wilcox Co.** Charles T. Smith has been appointed an assistant marketing manager of the boiler division, it was announced by S. T. Mackenzie, vice president in charge of sales for the division. Mr. Smith was formerly sales engineer in the company's Philadelphia district office.

In his new position, Mr. Smith will be in charge of propositions and technical sales assistance for industrial boiler products. He succeeds William H. Jackson, who was elected vice president in charge of sales of the Diamond Power Specialty Corp., Lancaster, Ohio. He will make his headquarters in Barberton.

Mr. Smith joined Babcock & Wilcox as a student engineer in 1947. After working as a service engineer in the Philadelphia and Chicago district offices for three years, he was transferred to the Philadelphia proposition department in 1951. He was made sales engineer in January, 1952.

**Westinghouse Electric Corp.** The board of directors has elected Mark W. Cresap, Jr., president and chief executive officer, and Gwilym A. Price, chairman of the board.

The company's policy and finance committee, established January 1st, 1958, was discontinued by the board.

E. V. Huggins, vice president and chairman of the executive committee, and John K. Hodnette, executive vice president, were re-elected to these positions.

Russell B. Read, formerly assistant treasurer, was elected treasurer, reporting to George G. Main, vice president, finance.

**Dewey and Almy Chemical Div., W. R. Grace & Co.** John-Basil Yannas of Boston has joined the Division as a chemist in the Organic Chemicals Research Laboratory.

His appointment was announced by Victor S. Frank, organic chemicals research manager. Mr. Yannas received an A.B. in chemistry from Harvard in 1957 and an S.M. in chemical engineering from the Massachusetts Institute of Technology in 1950.

**Perkins-Goodwin Co.** Louis Calder, Jr., announces that Charles F. Chaplin has joined the company as midwest director of sales research.

Mr. Chaplin will represent the company in the middle west territory from its Chicago office.

**Industrial Instruments, Inc.**, of Cedar Grove, N. J., has just announced that it has been given an exclusive license to manufacture and sell a special high-temperature, high-pressure conductivity cell developed by West Virginia Pulp and Paper Co.

Bernard Dreskin, president of Industrial Instruments, said the cells were perfected for controlling the concentration of wood chip cooking liquors in special pulping processes perfected by the paper company.

The licensing arrangement includes rights to several temperature compensating systems for use with the cells, Mr. Dreskin said.

Developed in the paper company's Luke, Md., research laboratory by D. Noel Obershain, the patented cells have been in continuous use for more than five years.

**Walworth Co.**, a leading manufacturer of valves and fittings, has recently completed negotiations with Midwest Piping Co., Inc., for the manufacturer of Walworth welding fittings. In announcing this new arrangement, John Wallace, president of Walworth said, "Midwest welding fittings complement our present lines of cast and malleable fittings and will be sold nationally through Walworth offices and distributors."

Products to be made by Midwest for Walworth include complete lines of elbows, reducers, tees, caps, laterals, etc. All comply with ASTM, ASA, ASME, and government and military requirements.

R. D. Clarke

**Brown Instruments Div. Minneapolis-Honeywell Regulator Co.** announces the appointment of Robert D. Clarke as its market manager for the paper and textile industries.

Mr. Clarke joined the Mobile, Ala., office of Honeywell as a sales engineer in 1951. He had been district manager of the automatic control firm's Columbia, S. C., office since 1954.

A native of Pennsylvania, he was graduated from Georgia Institute of Technology in 1946 with a degree of bachelor of science in naval science and in 1950 with a B.S. in mechanical engineering. Before joining Honeywell he was a junior engineer in heating, ventilating and air conditioning design with E. W. Klein & Co. in Atlanta.

Mr. Clark is a member of the American Society of Mechanical Engineers, Instrument Society of America, Southeastern TAPPI, and Georgia Society of Professional Engineers.

**Diamond Power Specialty Corp.** William H. Jackson has been elected vice president in charge of sales, W. J. Fitzburgh, president, has announced. Mr. Jackson was formerly assistant marketing manager of The Babcock & Wilcox Co.'s boiler division.

In his new position, Mr. Jackson will be responsible for the sale of all products of Diamond Power. He will make his headquarters at the company's plant in Lancaster.

# U.S.I. POLYETHYLENE NEWS

A series for plastics and packaging executives by the makers of PETROTHENE® polyethylene resins

APRIL, 1959 — U.S. Industrial Chemicals Co., Division of National Distillers and Chemical Corporation — 99 Park Ave., N. Y. 16, N. Y.


## Packaging Notes

**Packaging Show** — The 28th Annual AMA National Packaging Exposition will be held this year at the International Amphitheatre in Chicago, April 13-17. Close to 400 companies will have exhibits at the show. More than 35,000 visitors are expected from every state in the union, Canada and several dozen foreign countries. Exhibits will cover the entire range of the packaging industry — machinery, materials, methods, services, design and finished packages.

Running concurrently with the Exposition will be the AMA National Packaging Conference at the Palmer House, April 13-15. Conferees will hear discussion of such subjects as top management appraisal of packaging, utility in package design and special problems in industrial packaging.

Last Packaging Exposition to be held at the International Amphitheatre, Chicago, was in 1957. Show drew visitors from all over the world.

**U.S.I. exhibit** at the Packaging Exposition will feature a staff of technical experts to answer questions about poly film and packaging problems. As a supplier of polyethylene resins, U.S.I. frequently has been able to make suggestions that have saved packagers the necessity of making costly changes in their operations. Packagers are encouraged to make use of this opportunity to discuss innovations in poly film packaging that have been developed in the past year. Also available at the exhibit will be new application and technical data on cast film. The U.S.I. exhibit will be at Booth No. 1133-1135.

**New dual dispensing squeeze bottle** is a good example of polyethylene's versatility. Poly bottle dispenses medication via calibrated dropper at one end; nozzle and valve at other end permit use as a squeeze spray. A removable base cap at the nozzle end enables the bottle to be stood on end in the medicine cabinet.

**Farm produce is fresher** when packaged in polyethylene liners, government researchers report. Cabbages stored in poly-lined crates were found to have lost less than one percent of their weight after a week's storage. Drying out of cabbages stored in unlined crates over the same period resulted in a weight loss of 14 per cent.

# Cast Polyethylene Film Makes Big Gains As Ultra-Clear Packaging Material

### First Introduced by U.S.I. at Last Year's Packaging Show

A year after it was first introduced to the industry by U.S.I., ultra-clear cast polyethylene film has firmly established itself as a leading transparent packaging material. Cast film is now being widely used to package produce, frozen foods, hosiery, even tortillas and tamales. As an overwrap, cast film is packaging bread, paper plates and towels, napkins, sheets and pillowcases. Production of cast film, now about a million pounds a month, is expected to triple by 1960. At time of introduction, cast film was produced only on laboratory scale. Now approximately six film extruders are making cast film, and another six or eight have plans to produce the film within the year.

Cast film has shown that it can compete successfully with the most popular conventional transparent films in clarity and gloss. And its price is lower than most.

In just a year since its introduction by U.S.I., cast polyethylene film has firmly established itself as a leading transparent packaging material. It is now used to package hundreds of different consumer products.

#### Uses Extrusion Coating Equipment

Cast film, first announced by U.S.I. at the Packaging Show in April, 1958, is made by a different processing technique than normally used in polyethylene film production. In the process, polyethylene is extruded and drawn or cast across a highly polished chrome-plated roll. This casting step greatly improves the optical characteristics of the film. An immediate and even quenching prevents the formation of haze-producing crystals in the matrix of the polyethylene, and the polished roll surface produces a glossy surface on the film.

In making cast film, choice of resin is important. U.S.I.'s and customers' experience has, in general, shown PETROTHENE 205 — with a density of 0.924, melt index of 3.0 — to have optimum properties for making bags, and PETROTHENE 239 — with a density of 0.929, melt index of 5.0 — to be best for making overwrap film. Where special property combinations are desired, U.S.I. has a variety of other resins that can be used.

Although the equipment needed for making cast film is initially more expensive, production costs are competitive with those for conventional extruded film. Production speed is the same or greater.

**Polyethylene Quality Control – I**

## Melt Index Test Assures Uniform Molding Properties

Melt index is used widely to indicate flow rate of a polyethylene resin. Uniformity of melt index helps assure uniformity of such other resin properties as production rate, low temperature flexibility and resistance to stress cracking.

At U.S.I., melt index of every lot of PETROTHENE resin is determined in accordance with ASTM method D1238-57T. The test in effect measures the amount of heated resin that is extruded through a standard orifice at a given pressure. The melt index of the resin sample is the weight in grams extruded in ten minutes. To insure uniformity within the same lot and from lot to lot, U.S.I. routinely measures the melt index of separate samples taken from various points within each lot.

Processors interested in details of the ASTM melt index test may obtain free copies of ASTM D1238-57T by writing the Editor, U.S.I. POLYETHYLENE NEWS.

## Tables Simplify Calculation of Film Thickness, Weight

A new 8-page booklet prepared by U.S.I. enables processors to make quick, accurate calculations concerning gauge and weight of polyethylene film and bags.

The booklet contains simplified tables and formulas for solving such problems as average thickness of film or bag that can be expected when density, weight and dimensions are known; number of feet per pound of film that will be yielded by a roll of known thickness and width; number of bags of a given size and gauge that can be made from a pound of resin.

Copies of the booklet, titled "Formulas and Tables for Polyethylene Film and Bags," may be obtained by writing Editor, U.S.I. POLYETHYLENE NEWS, 99 Park Avenue, New York 16, N. Y.

**DO YOU HAVE a new polyethylene packaging development you'd like the industry to know about? Make it routine to send your information on new developments to U.S.I. POLYETHYLENE NEWS.**

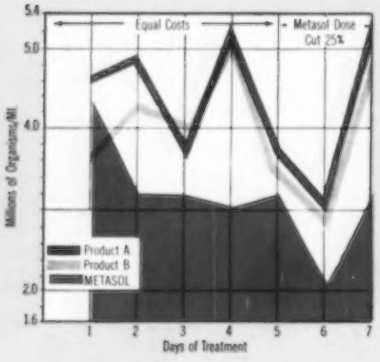
Address the Editor,
U.S.I. POLYETHYLENE NEWS, U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corp., 99 Park Avenue, New York 16, N. Y.

# NEW SLIMICIDE EXCELS

## METASOL chosen for regular use

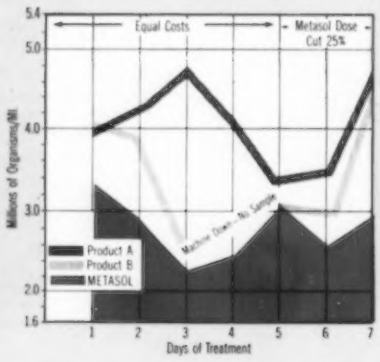
### What happened when METASOL was mill-tested against two widely used conventional slimicides

*Run parallel at equal prices with results verified by impartial mill engineers*



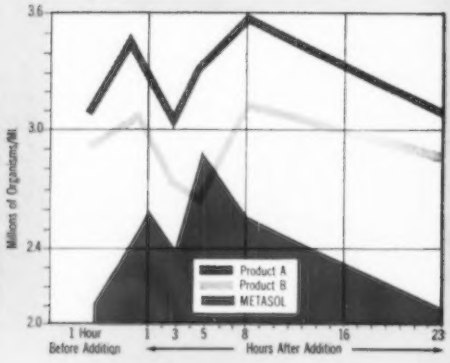

**25% to 35% MORE EFFECTIVE QUICK KILL**

Daily count of organisms per milliliter over a seven day period, **one hour** after addition of slimicide.




**30% to 40% MORE EFFECTIVE SUSTAINED KILL**

Daily count of organisms per milliliter over a seven day period, **23 hours** after addition of slimicide




**25% to 30% MORE EFFECTIVE AVERAGE KILL**

Daily count per milliliter on hourly basis, from one hour before addition of slimicide to 23 hours after.

## The same conclusive result from tests at three leading mills

### METASOL compared with conventional slimicide

In this bleached-kraft, hardwood pulp mill, solid METASOL replaced a solid conventional slimicide on an equal cost basis. Schedule for both slimicides was three times a day, at eight-hour intervals. All exposed parts, both wood and stainless steel, had been slime-coated when previous slimicide had been used. METASOL cleaned them after the first run.

Compared with a second machine, in which no slimicide was used, the METASOL-treated machine showed an organism count only half as high, even though the no-slimicide machine was washed down 7 to 15 times as frequently as the METASOL unit. The low count was maintained throughout six months of continuous use.

### METASOL in ground wood

METASOL was tested against two conventional slimicides in a newsprint mill using a mixture of ground wood and sulphite pulp. All three were run parallel at equal prices.

After only a few days, METASOL showed a far superior level of protection. At the request of mill management, the METASOL dose was dropped 25% in cost below the other two slimicides. METASOL continued to show a superior rate of protection and, over a two-week period, built up still more protection, then leveled off evenly. Over a three-week period, the machine using METASOL had higher productivity, no sign of microbiological slime break, and a much lower organism level.

### METASOL in comparative performance test

In a test at a bleached-kraft mill, one machine was treated with solid METASOL and the other with a solid conventional slimicide on an equal cost basis. At the start of the test, both machines showed a count of 4,000 organisms per milliliter. After 24 hours, the machine using the conventional slimicide showed a slime build up. Consequently, the METASOL treatment was reduced one-third.

At the end of a week, the count on the machine using METASOL had been cut to 2,000 per milliliter, while the count on the other machine had built up to 12,000 organisms per milliliter. In addition, the machine treated with METASOL had produced 17% more paper.

# METASOL SLIMICIDES

COPYRIGHT 1959, METALSALTS CORPORATION

# IN MILL TESTS
## after successful trials

**MILLS GIVE METASOL® HIGHEST RATING!**

- Most complete slimicidal action
- Most economical
- Highest, fastest solubility in water
- Odorless
- Colorless
- Harmless to equipment
- Minimum deactivation
- Sustained effectiveness
- Thoroughly field-proved

### *Scores on dollar-efficiency basis*
### *Gives around-the-clock protection*

METASOL is a completely new type of slimicide. It has been developed after seven years of research, during which it was evaluated against almost 2,000 other compounds, including all conventional formulations.

Thoroughly tested by leading mills, METASOL has been found superior to any other slimicide on the market. Every mill which has tried it has decided to use it on a continuing basis.

**Keeps machines running**

METASOL lowers production costs because it keeps machines clean and helps them deliver a finer product without loss of time. One mill which previously had to shut down weekends for wash-downs now runs five continuous weeks without a shut down. Daily production has gone up also.

**Protects against all organisms**

Of all commercial products tested, this new slimicide provides the most effective "quick kill" and "sustained kill" action against bacteria, fungi and other microorganisms. It is so effective that doses can be reduced substantially compared with conventional slimicides, and still produce better results. Furthermore, tests show that, unlike other slimicides, METASOL does *not* permit microorganisms to develop resistance.

**Lowest cost**

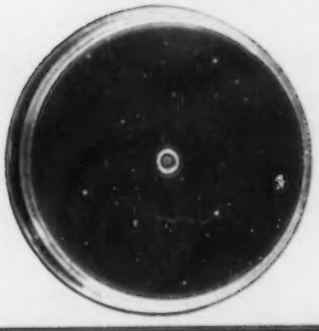
METASOL is the most economical slimicide you can buy. It costs far less per-effective-dose. It has the highest and fastest solubility in water. You can use it in dry (METASOL-P) or liquid (METASOL-L) form, whichever your particular mill situation may require.

**Demonstration in your mill**

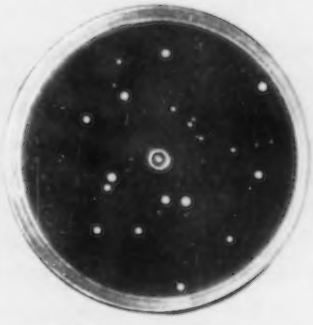
METASOL chemists and micro-biologists will demonstrate its effectiveness in your mill, on your machines, under normal production conditions. On request, they will analyze your particular slime problem, recommend corrective and preventive measures, and train members of your own organization in efficient slime-control methods.

Use the coupon on the bottom of this page to ask for your copy of a new brochure which shows exactly how METASOL slimicide works, and actual comparative performance records under mill-run conditions.

## 21 DAY TEST SHOWS SUSTAINED KILL



**METASOL**



**PRODUCT "A"**

**PRODUCT "B"**

**METASOL DIVISION**
**Metalsalts Corporation**
**200 Wagaraw Road**
**Hawthorne, New Jersey**

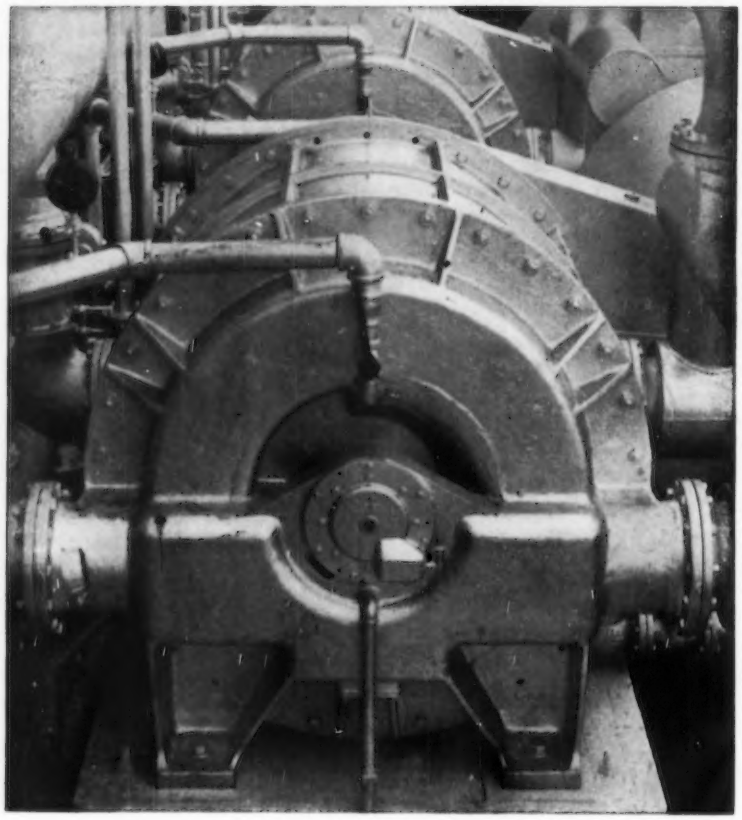
Send new METASOL slimicide brochure detailing cost and production savings established by actual mill records.

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____ CITY_____ ZONE____ STATE_____

# High machine speeds?
# High temperature headbox stock?
# You need NASH Vacuum Pumps!



Air from the suction rolls on paper machines carries with it substantial quantities of moisture. This considerably reduces the effective air handling capacity of any vacuum pump except the Nash. In the Nash Vacuum Pump, because of the unique principle of operation, the bulk of this vapor is effectively condensed inside the pump. The total capacity of a Nash is therefore increased.

When you specify a Nash Pump it can be closely sized to the job. It is not necessary to select an over-sized unit, because the rated capacity of the Nash may be relied upon.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

**NASH ENGINEERING COMPANY**

**441 WILSON ROAD, SO. NORWALK, CONN.**


# NEW EQUIPMENT & SUPPLIES

## T&P Relief Valve Has High Capacity

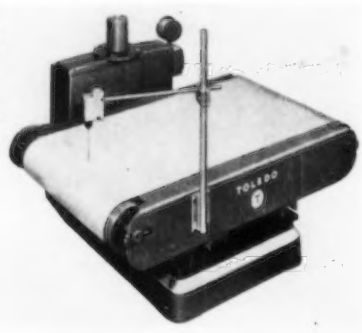
Watts Regulator Co., Lawrence, Mass., announces a large capacity, ASME rated combination T&P relief valve. The No. 340 is equipped with a test lever and has $1\frac{1}{2}$ inch female inlet and outlet connections. Features include all-bronze construction, guideless stick-free seating design, and extremely high capacity. Its ASME steam pressure rating is 5,707,000 B.t.u. per hr. at 125 lbs., and the temperature water rating is 3,500,000 B.t.u. per hr. Said to be the only valve of its type available, Watts states it can be installed on larger installations which previously required two or more smaller valves for sufficient capacity.

## Weighing Continuous With Automatic Scale

The Automatic Checkweigher will continuously handle—without stopping—packages weighing 50 lbs. to 200 lbs. (depending on size) at speeds of up to 40 items per minute with an accuracy of approximately one part in 3000, says the company.

Equipped with a belt-type motorized conveyer on the weight section, the Model 9460 provides 100 per cent in-line checkweighing, and eliminates spot checking. The unit may be quickly adjusted to change from one package weight to another by resetting poises on the beams that are housed in a locked enclosure.

Remote zone indication stations that provide a continuous visual check of the operation can be furnished. A pilot light unit, convenient to the operator to show the weight zone (Under, OK-Light, OK, OK-Heavy, Over) into which each item



# IF You Ever Installed a Felt... You Know the Value of This Card!

IMPORTANT!
FOR SIMPLER, MORE TROUBLE-FREE INSTALLATION
THIS BLACK EDGE
On the NUMBER EDGE of this and Future Tenax Felts
Helps to prevent reversing or twisting the felt when pulling it over the rolls—
Saves time through faster identification of felt side and direction—
LOCKPORT FELT COMPANY, Inc.
Serving the Papermakers Since 1891
NEWFANE, N. Y.
STARKVILLE, MISS.

Two years ago Lockport Felt Company originated this innovation, and began to ship these cards with every Tenax and Dura-Loft Felt. Papermakers everywhere tell us the "black edge" helps reduce "down time", eliminates guesswork.

Progress comes in small packages too!

Dura-Loft Felt

**LOCKPORT FELT COMPANY, Inc.**

*Serving the Papermakers Since 1891*

NEWFANE, N. Y. STARKVILLE, MISS.

TENAX FELTS

IF YOU USE

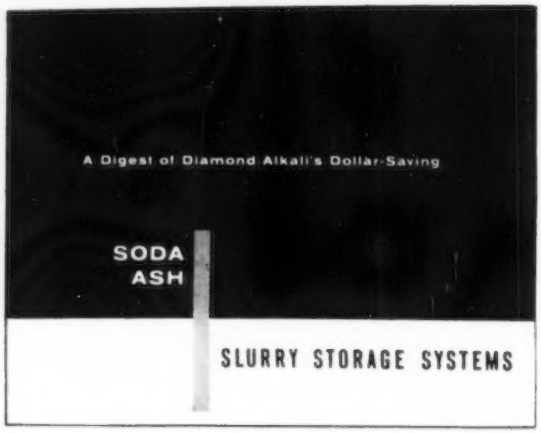
# SODA ASH

as a solution in processing operations

**Here's how you can:**

cut storage space by 60%
eliminate dust
simplify and speed up handling
step up efficiency, save money

**Get this FREE booklet from Diamond**




This 16-page book is loaded with facts, photos, and full-page diagrams showing the three alternate Diamond-developed slurry storage systems now used in many plants. The book is yours, FREE. Mail the coupon today.

For complete information or informed technical service, call your Diamond Representative or write Diamond Alkali Company, 300 Union Commerce Bldg., Cleveland 14, Ohio.

Diamond Chemicals

Diamond Alkali Company
300 Union Commerce Bldg.
Cleveland 14, Ohio

Please send me the free book, "Soda Ash Slurry Storage Systems".

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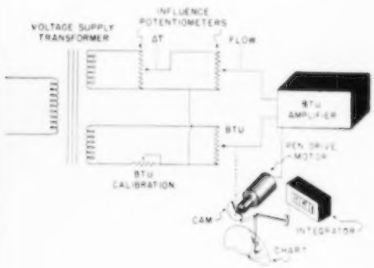
ALSO SEND ME INFORMATION ABOUT DIAMOND

CHLORINE ☐ CAUSTIC SODA ☐ SILICATE OF SODA ☐ SALT CAKE ☐


falls is also available. Magnetic counters of the key-reset type can provide numerical data to control the packing or processing machine operation. The Model 9460 is also capable of operating reject mechanisms, audible signals and trend indicators. For further information request Form 2968 from Toledo Scale Corp., Toledo, Ohio.

## Recorder Unit Measures Heat Transfer

A single recorder is used to continuously record, indicate, and integrate B.t.u. loss or gain of a flowing




liquid, as well as temperature differential and flow rate, in the Model 913 B.t.u. Meter, now available from The Hays Corp., Michigan City, Ind.

Two platinum resistance temperature elements, connected and measuring inlet and outlet temperature of the liquid, form two legs of a resistance bridge in which the differential temperature receiver in the recorder acts as a rebalancing unit. Liquid flow through the process is also recorded. Differential temperature and flow retransmitting slidewires on their respective receiver units are connected so as to multiply their respective signals. This product represents number of B.t.u.'s gained or lost per unit of time by the liquid as it passes through the process. B.t.u. signal is directed to the B.t.u. receiver unit, where it is rebalanced and recorded.

## D. C. Motors Are Lighter, Respond Faster

A recently announced line of d.c. motors, called Flexitorq motors, is available in ratings of 1 to 200 horsepower, in drip-proof and drip-proof guarded enclosures.

Improved performance characteristics include faster acceleration, deceleration, reversing and speed changing, made possible because of a low inertia armature and improved commutating ability. Class B insulation used throughout the motor,

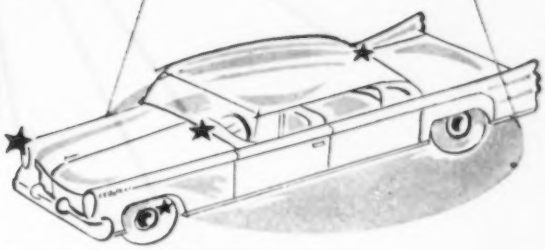
**SULPHUR** ONE OF THE FOUR STRONG PILLARS OF PROCESSING

# INVISIBLE

## BUT PRESENT

**35 POUNDS OF SULPHUR**

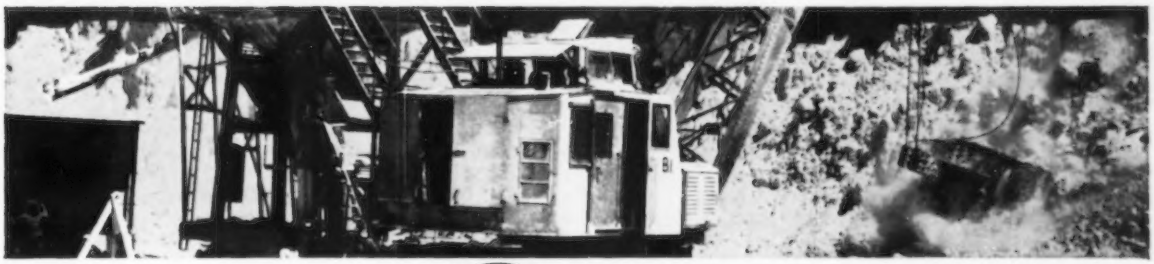
and derivatives help to produce the average automobile



Sulphur enters the automobile picture in two ways: directly and indirectly.

Sulphur, either as the elemental or as one or more derivatives, is used in the manufacture of rubber and rayon. Indirectly, it is used in processing the steel that forms the body. It is used in the plating operation on trim and fixtures. It is deliberately introduced into certain steels to provide better machining qualities.

Recognizing the importance of Sulphur to the basic industries such as the manufacture of automobiles, and to our ever-expanding economy generally, TGS is broadening its service: production, distribution and technical.



SULPHUR PRODUCING UNITS

• Newgulf, Texas • Spindletop, Texas
• Moss Bluff, Texas • Worland, Wyoming
• Fannett, Texas

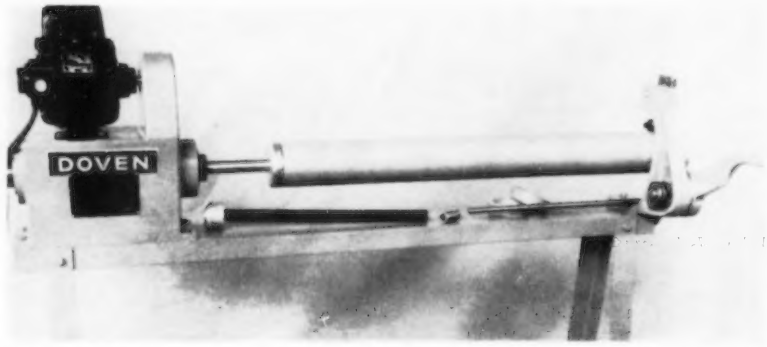
**TEXAS GULF SULPHUR CO.**

75 East 45th Street, New York 17, N. Y.
811 Rusk Avenue, Houston 2, Texas

is a factor in Flexitorq's reduced weight and size.

Other claims made for the motor are: quick-release latches to secure the wrap-around cover that protects commutating brushes and brushholders; low inertia springs that remain attached to brushes during replacement and assure correct pressure without readjustment and design that permits removal of individual brushholders without dismantling the entire motor.

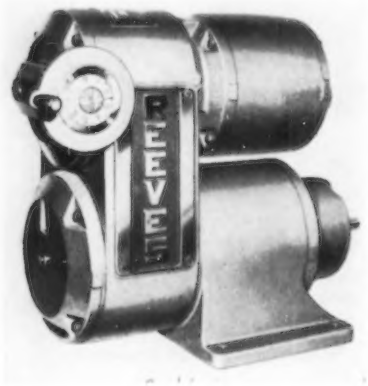
A broad range of modifications such as flanges, tachometers and gear units equip the motors for special application requirements. The line also includes Flexitorq generators in ratings of $\frac{3}{4}$ to 170 kw. For information and dimensions, request Bulletin 3150 from The Louis Allis Co., Dept. P. Milwaukee 1, Wis.




A PORTABLE CORE CUTTER capable of slicing various sizes and diameters of tubes into a variety of core lengths is announced by Appleton Machine Co. The standard model can hadle cores of one inch to eight inch inside diameter and can slice them into half-inch widths using tubes up to eighty inches in length. Larger and smaller units are available, company officials report. Write to Doven Div., Appleton, Wis., for further information.

## Variable-Speed Drives With Pneumatic Control

The Reeves Pulley Co., 1225 Seventh Street, Columbus, Ind., has unveiled 7½ and 10 hp motor drives




with single-, double, or triple-reduction gears that produce speed ranges of from 2:1 to 8:1 within output speed limits from 4 to 3940 r.p.m.

Standard components in C- or Z-flow designs can be arranged into vertical, horizontal or 45° and trunnion mounting on floor, wall or ceiling. The case can be enclosed for splash-proof, totally-enclosed or corrosion-proof requirements.

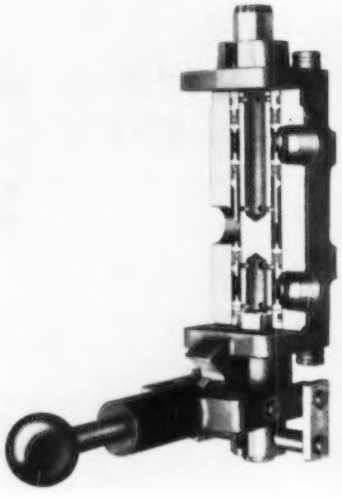
Other features include standard NEMA C-face bracket-mounted constant-speed motors; baffle-type vent plugs for leak proof reducer venting; magnetic drain plugs on all reducers; and automatic bearing lubrication. The pre-loaded spring in the variable-speed disk-assembly maintains proper belt tension. A handwheel control provides infinite speed adjustment; its assembly may be extended by chain sprocket or rod—with or without universal coupling.

"Airtrol," designed to replace the handwheel control and actuated by pneumatic instrumentation, is an accessory that provides automatic linear speed changes over a 10 to 1 range. It is sensitive to changes in pressure of between 3 and 15 p.s.i.

Also available are electric remote controls with push-button stations and mechanical automatic controls that produce speed changes of from 2:1 to 10:1, depending upon style and horsepower of the unit. Other accessories include tachometers, magnetic brakes, and adjusting rails.

## Hydraulic Valves Have Distortionless Seals

A line of single piston type hydraulic operating valves known as Durable Seal Valves has been announced by Homestead Valve Manufacturing Co., Coraopolis, Pa. A feature of these valves as reported by the manufacturer, is that the same line pressure acts both inside and outside the "U" cup seals at all times during the operating cycle. Thus seals are floated across ports without, distortion, shear, or undue wear. Likewise there is no distortion of the stainless steel piston or of the pedestals which position the "U" cup seals. The result is said to be extremely low upkeep, long valve life, positive control, and easy operation. Available in sizes from ½ inch to 2 inches in three-way types, and up to 6 inches in the two-way or spray valve type, Durable Seal Valves are made with either screwed or flanged pipe connections; for direct hand operation or a choice of remote controls including solenoid or hand-operated air or hydraulic pilot valves. They are cast in 88-10-2 bronze or steel for working pressures up to 2000 pounds.



## Static Indicator Controls Temperature

Combining magnetic amplifier and transistor circuitry, a Limitemp (TM, type 701) indicating temperature controller available from Westinghouse Electric Corp.'s Director Systems Department, 356 Collins Ave., Pittsburgh 6, Pa., monitors and controls temperatures within the range of 100 to 400 degrees F without the use of electronic tubes.

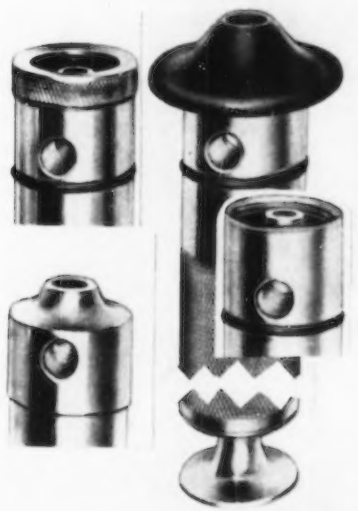
The manufacturer states that control is within plus or minus 3 degrees F about the temperature level selected; accuracy for indication by meter reading is said to be plus or

minus 6°F. A lamp signals whenever the controller is functioning to restore temperature to the level desired. The sensing system utilizes standard copper temperature detectors having a resistance of 10.00 ohms at 25°C. Rated power input is 115 volts at 60 cycles; power output of the device is 5 watts at 24 volts d-c. Approximate dimensions are: height — 8½ inches; width — 4 inches; depth — 6 inches.

## Vacuum Hand Pump has Variety of Applications

A vacuum pump, the "Golden Thief" samples liquids and some powdered solids from tanks, drums, crankcases and many inaccessible places by drawing the liquid into laboratory bottles or cans.

Standard models are made to screw on bottles from one ounce to one gallon (20 to 38 mm neck threads), and on cans from ¼ pint to five gallons (⅝ inch to 1¾ inch caps), depend-



# QUICK CURE FOR BELTING HEADACHES

To avoid costly shutdowns when belts break . . . to eliminate time lost shortening belts that have stretched . . . call for Texalon, the new all-synthetic belting by Rhoads.

Texalon is easily made endless in minutes on the machine by your own maintenance personnel. It's the quick belt that minimizes shutdowns. Texalon bounces without stretch, never needs shortening. Replaces rubber, leather, and woven endless belts. Lasts longer, works better.

Whether you use belting for power transmission, conveying, or carrier tapes, there's news and profit for you in Texalon. Belt widths up to 24".

Give us a few facts about your belting application, or write for Texalon bulletin to J. E. Rhoads & Sons, Wilmington 99, Delaware.

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ROLL GRINDER . . . Texalon belts produce a superior grinding finish due to less chatter marks and vibration . . . minimum stretch or no stretch whatever . . . less slippage due to splash from wet grinding operations. Oil does not seem to have any effect on the belt.

PAPER CONVERTING FEEDER TAPES . . . Texalon tapes maintain their tension, feed paper uniformly, easily made endless on the machine.

PUMPS . . . 12" wide Texalon belt on 60 HP Nash pump drive—easily installed and "running fine".

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ing on the size base of the pump ordered. Air is extracted from the container on the upward stroke of the plunger and the liquid is sucked or siphoned through the base of the pump directly into the container. The material pumped does not enter the cylinder, therefore, it is an easy matter to keep it clean. It is made from all aluminum, brass or stainless steel and is 1¼ inches round x 7 inches long and weighs only 6 ounces for the aluminum and 16 ounces for the brass and stainless steel. Further information: W & W Mfg. Co., P.O. Box 9311, Chicago 90, Ill.

Get quick, accurate results with the Bauer-McNett Fiber Classifier.

For complete details and bulletin, write or call us at FAirfax 3-5501.

**The Bauer Bros. Co.**

HEADQUARTERS FOR PROGRESS

1758 Sheridan Ave. • Springfield, Ohio


# Figures of the Week

**PAPER PRODUCTION RATIO REPORT**—American Paper & Pulp Assn. Figures

**(Production as per cent of normal capacity)**

COMPARATIVE WEEKLY SUMMARIES

| | | | | | |
|---|---|---|---|---|---|
| | Feb. 28 | Mar. 7 | Mar. 14 | Mar. 21 | Mar. 28 |
| 1959 | 93.0r | 91.7r | 93.7r | 93.7r | 89.9 |
| | Mar. 1 | Mar. 8 | Mar. 15 | Mar. 22 | Mar. 29 |
| 1958 | 90.5 | 86.8 | 89.1 | 91.0 | 90.5 |

r Revised.

COMPARATIVE MONTHLY SUMMARIES

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1959 | 87.6‡ | 90.2‡ | — | — | — | — | — | — | — | — | — | — | — |
| 1958 | 86.9 | 89.5 | 89.5 | 88.4 | 87.2 | 87.2 | 75.3 | 89.6 | 86.5 | 91.6 | 90.4 | 83.1 | 87.1 |

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

| | 1952 | 1953 | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 |
|---|---|---|---|---|---|---|---|---|
| Year to Date | 97.0 | 94.6 | 94.1 | 95.3 | 101.2 | 95.9 | 87.5 | 90.0 |
| Year Average | 88.6 | 92.3 | 91.6 | 94.0 | 97.9 | 90.9 | 87.1 | — |

*All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.*

**PAPERBOARD OPERATING RATIOS†**—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

| | | | | | |
|---|---|---|---|---|---|
| | Feb. 28 | Mar. 7 | Mar. 14 | Mar. 21 | Mar. 28 |
| 1959 | 92 | 96 | 93 | 94 | 95 |
| | Mar. 1 | Mar. 8 | Mar. 15 | Mar. 22 | Mar. 29 |
| 1958 | 86 | 87 | 87 | 88 | 86 |

COMPARATIVE MONTHLY SUMMARIES

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year Avg. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1959 | 86 | 93 | — | — | — | — | — | — | — | — | — | — | — |
| 1958 | 80 | 86 | 88 | 84 | 84 | 86 | 76 | 93 | 90 | 95 | 92 | 81 | 86 |

† *Percents of operation based on "inch-hours" reported on a 6-day basis.*

**SUMMARY OF PAPERBOARD STATISTICS**—National Paperboard Assn. Figures

| ITEM | THIS WEEK ENDING Mar. 28, 1959 | LAST WEEK ENDING Mar. 21, 1959 | CUMULATIVE TO DATE Jan. 1 to Mar. 28 inc., 1959 |
|---|---|---|---|
| % Activity | 95% | 94% | 92% |
| TOTAL | 318,345 | 306,218 | 3,664,864 |
| Liner | 106,173 | 98,509 | 1,232,302 |
| Corrugating Material | 47,535 | 47,052 | 549,266 |
| Chip & Filler Board | 5,757 | 4,953 | 61,527 |
| Total Containerboard | 159,465 | 150,514 | 1,843,095 |
| Folding | 57,338 | 58,559 | 696,166 |
| Set-Up | 12,602 | 11,620 | 144,323 |
| Special Food Board | 31,541 | 32,624 | 341,371 |
| Other | 57,309 | 51,791 | 639,909 |
| Total Boxboard | 158,880 | 155,704 | 1,821,769 |
| TOTAL ORDERS | | | |
| Received | 306,512 | 279,776 | |
| Unfilled End of Week | 433,180 | 444,024 | |


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# brighter, cleaner, stronger pulp

FROM SOUTHERN PINE

## Buckeye Pulp

*Bleached and Semi-bleached Kraft from Southern Pine*

STARTING wood pulp production in 1954 with an ultra-modern plant, Buckeye has constantly sought new ways to produce cleaner, brighter, and stronger pulp. This continued improvement means top quality pulp today . . . even higher qualities tomorrow.

Specially designed double-screening equipment insures outstanding pulp cleanliness. A unique seven-stage bleaching process utilizing chlorine dioxide makes possible the highest levels of brightness without strength loss. And, to provide a continuing supply of quality pulpwood, Buckeye has increased its timber holdings to over four acres for every ton of annual production.

To meet the demand for highest quality Buckeye kraft pulps, a complete new production unit is now being added. Write or phone and let us tell you how we can meet your most exacting specifications.

BUCKEYE CELLULOSE CORPORATION, MEMPHIS 8, TENN.
*Wood pulp plant at Foley, Florida • Cotton linters plant at Memphis*

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Timber Estimators and Foresters
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# Prices of Fibers

## MARKET WOOD PULP

SECOND QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

**Delivered Basis**

| | U.S. | Canadian | Swedish | Finnish | Norwegian |
|---|---|---|---|---|---|
| Groundwood | $ 82.50/ 90.00 | $ 82.50/ 90.00 | ‡390.00/ — | ‡380.00/ — | ‡390.00/ — |
| Bleached Gw'd | $ 97.50/100.00 | $ 97.50/100.00 | | | |
| Kraft, Blchd. | 157.00/ — | 160.00/162.50 | ‡157.00/162.50* | | ‡157.50/ — |
| Kraft, Blchd. Hdwd. | 152.00/ — | | ‡137.00/ — | | |
| Kraft, Semi-bleached. | 140.00/ — | 140.00/ — | | | |
| Kraft, Unbl. | 117.50/125.00 | 125.00/130.00 | †125.00/130.00 | 125.00/ — | |
| Sulphite, Blchd. | 155.00/ — | 155.00/ — | *155.00/ — | *155.00/ — | 155.00/ — |
| Sulphite, Bl. Hdwd. | 150.00/ — | | | | |
| Sulphite, Unblchd | 135.00/ — | 135.00/ — | †135.00/ — | *135.00/ — | |
| Sulphite, Unb'l, Gl'an | | 140.00/ — | †134.00/ — | | |
| Soda, Blchd. | 147.00/150.00 | 150.00/ — | | | |

‡ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances

## COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED APR. 2

| Grade | Atlanta | Memphis | Dallas | Los Angeles |
|---|---|---|---|---|
| 1 | n.a. | n.a. | n.a. | n.a. |
| 2 | n.a. | n.a. | $ — /7.25 | $7.50/7.40 |
| 3 | $7.50/6.50 | $7.50/7.00 | 7.00/6.50 | 7.15/6.90 |
| 4 | 6.50/5.50 | 6.50/6.00 | 6.25/5.75 | 6.50/6.25 |
| 5 | 5.50/4.50 | 5.25/5.00 | 5.50/5.00 | 5.75/5.40 |
| 6 | 4.50/4.00 | 4.75/4.50 | 4.50/4.25 | 4.50/4.00 |
| 7 | 4.00/3.00 | 4.00/3.50 | 4.00/3.00 | 3.00/2.75 |

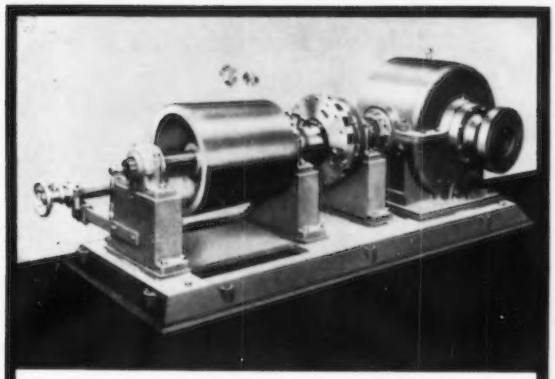
## WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

| | New York | Boston | Chicago | Los Angeles |
|---|---|---|---|---|
| | Apr. 6 | Apr. 6 | Apr. | Apr. |
| No. 1 Mixed Paper | $ 10.00/ 11.00 | 10.00/ 12.00 | 9.00/ — | 14.00/ — |
| No. 1 News | 17.00/ 18.00 | 18.00/ — | 20.00 | 18.00/ — |
| Overissue News (Lg. size) | 16.00/ 18.00 | 16.00/ 17.00 | 25.00 | 20.00/ — |
| Mill Wrappers | 19.00/ 22.00 | 16.00/ 18.00 | 14.00 | 15.00/ — |
| Old Corrugated Containers | 24.00/ 25.00 | 23.50/ 24.00 | 23.00 | 23.00/ — |
| Super Assorted Kraft Paper | 35.00/ 40.00 | — / — | 35.00/ — | 55.00/ — |
| New Double Kr. Ld. Corr. Cuts | 35.00/ 37.50 | 37.50/ — | 37.50/ — | 35.00/ — |
| (Semi-chem. medium) | 47.50/ 50.00 | 45.00/ 50.00 | — / — | — / — |
| New 100% Kraft Corr. Cuts | 40.00/ 42.50 | — / — | 57.50/ — | — / — |
| New Br. Kraft, Env. Cuts | 70.00/ 75.00 | 70.00/ 75.00 | 52.50/ — | 55.00/ — |
| New Br. Kr. Bag Waste Prntd. | 55.00/ 60.00 | 55.00/ 60.00 | 52.50/ — | 55.00/ — |
| New Br. Kr. Bag Waste Unprintd | 60.00/ 65.00 | 65.00/ 75.00 | 62.50/ — | 60.00/ — |
| No. 1 Groundwood Shvs. | 25.00/ 30.00 | 25.00/ 30.00 | 24.00 | 35.00/ — |
| White Newsblanks | 60.00/ 65.00 | 48.50/ 55.00 | 45.00/ — | 55.00/ — |
| No. 1 Soft White Shvs. | 60.00/ 65.00 | 60.00/ 65.00 | 55.00/ — | 70.00/ — |
| Super Soft White Shvs. | 65.00/ 75.00 | 75.00/ 85.00 | — / — | — / — |
| Hd. White Shvs. | 90.00/ 95.00 | 90.00/100.00 | 85.00/ — | 95.00/ — |
| Hd. White Env. Cuts | 105.00/110.00 | 105.00/115.00 | 90.00/ — | 113.00/ — |
| Col. Tab. Cards | 65.00/ 67.50 | 60.00/ 67.00 | 52.50/ — | 40.00/ — |
| Manila Tab. Cards | 82.50/ 85.00 | 82.50/ 85.00 | 75.00/ — | 65.00/ — |
| No. 1 Col. Ledger | 35.00/ 47.50 | 37.50/ 42.50 | 47.50/ — | 37.00/ — |
| White Ledger | 60.00/ 62.50 | 60.00/ 65.00 | 57.50/ — | 55.00/ — |
| Mixed Book & Mag.† | 25.00/ 28.00 | — / — | 17.00/ — | — / — |
| No. 1 Books‡ | 30.00/ 32.50 | 24.00/ 26.00 | 35.00/ — | 17.00/ — |

†Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.



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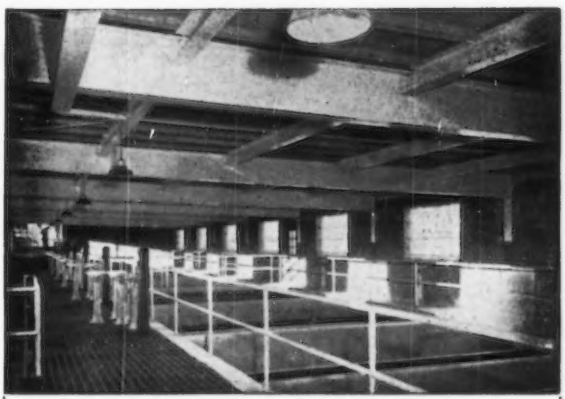

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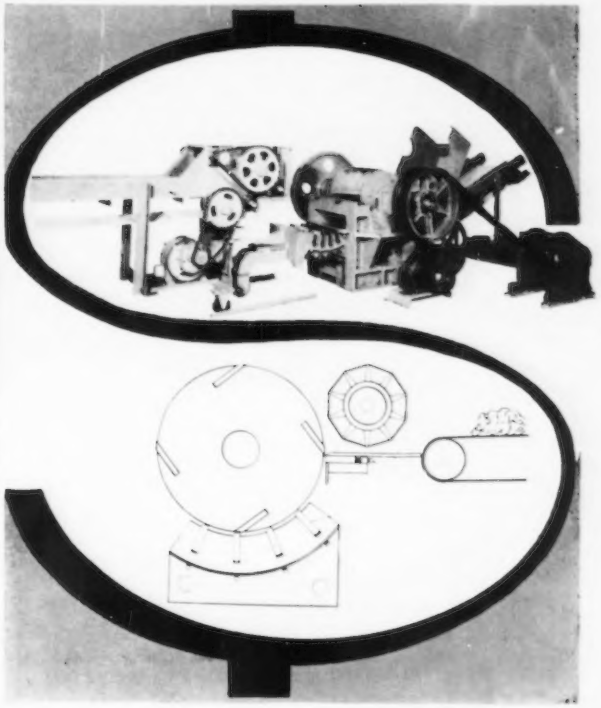

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This multiplex cutter effects savings in initial cost. One machine instead of two does the necessary fine cutting.

The rotating knives slash through the moving rag stock against the top bed knives. The cuttings then cascade down upon the upturned edges of four additional fixed knives beneath, where the whirling blades give a shear cut before discharging to duct or conveyor. There are 20 shearings at each revolution, 12,000 a minute at 600 RPM. The photo above shows cutter with feed and cradle moved back for adjusting knives.

It saves money and time in production too. The finer cuttings save time and power in the beaters.

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**SINGLE and DUO FILTERS**
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**RONNINGEN-PETTER COMPANY**
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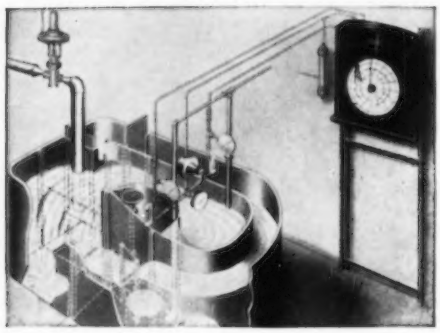
**...The Brammer**



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**SEWING MACHINES**
*with New "tape-over" sewing feature*
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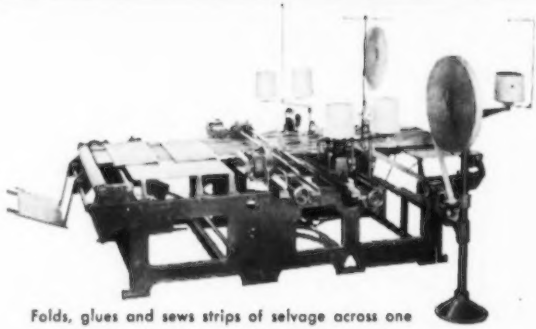

Folds, glues and sews strips of selvage across one or both ends of multi-wall tubes in one operation. Equipped to do "tape-over" sewing (selvage pasted over stitches rather than stitches going through the selvage). Can also do regular sewing (through selvage).

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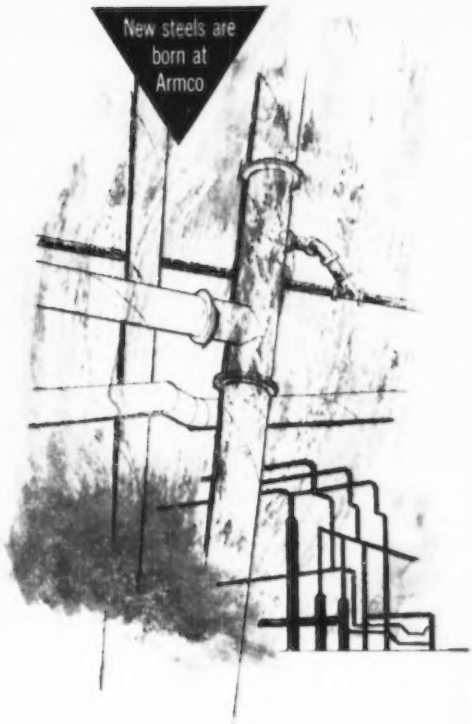


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New dissolving pulp mill located at Sitka, Alaska. (Sitka is located in southeastern Alaska — Moderate Climate—96" annual rainfall)

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Must have previous experience in organization and operation of pulp mill store room.

**CHIEF ELECTRICIAN**

Requires at least 5 years previous experience in pulp mill as lead maintenance electrician.

**TOUR FOREMAN**

Applications will be received for above position in a modern sulphite dissolving pulp mill which will use MgO process with a continuous bleach plant and Minton Dryer.

**LABORATORY SUPERVISOR and ASSISTANT LABORATORY SUPERVISOR**

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Personnel Supervisor
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1—54" 1-color Rotogravure Press
1—49" 1-color Rotogravure Press
1—48" 4-color Cottrell Heinrich; 3 Flexo; 1 Gravure
1—42" 4-color Kidder Std. Anilliner
1—42" 6 color Kidder FR-6 Standard Master Anilliner
2—33" 6-color Cottrell-Heinrich Flexo Presses
1—30" 4-color H-S Flexo Press
1—24" 5-color Kidder Colloprinter
1—18" 2-color Potdevin (Model-217) Roll to Roll Press
1—17" 3 color Heinrich "Lilliput" Flexo Press
1—10" 4 color Roto Press
2—New Era Presses;—9" x 12"
2—Meisel rotary press for form printing
1—23" two color Manhasset Flexo tail printer

**POWER PAPER CUTTERS**

Seybolds: 1—44" late model Seybold Model P4460 New 1952
Precision: 40", 50" & 64"; 10Z: 40", 57" & 65"; 20th Century: 45", 54" & 60"; Dayton (6Z): 35", 40" & 84"; Holyoke: 65"; Sheridan: 36" new model, 55"; Oswegos: 38" & 44" & 34", 54" Heavy Duty; Lawson: 52" Auto Space & 52" Standard

**CAMACHINES**

1—72" Type 10, Anti Friction bearings. Speed 2000 F.P.M.
1—75" 10-11
1—72" 26-3A Cameron
1—72" 10-04 Shear Cut
1—72" 10-10A
1—62" & 2—52" 9-5
1—62" 10-5
1—62" 26-2A with 100 score cutting units
1—62" 40-1-AF
1—52", & 1—42" Model 24-7
1—42", 50" & 62" Type 6

**OTHER SLITTERS**

1—82" Langston Type B
1—60" Langston Type A
1—42" Kidder Merchant Model
1—36" Kidder SLN (Shear Cut) Fully Equipped for converting adding machine & teletype rolls.
30" Fales Model B Slitter and Rewinder
2—24", 1—30", 1—36" & 1—40" Kidder S.L. Shear cut

**MISCELLANEOUS MACHINES**

1—81" Dietz "Facial Roll" Toilet Converter (1954)
1—Lawton Mod. "A" Jr. Toilet Roll Wrapper
4—62" 25W H-S Roll Winders
2—60" Potdevin Squeeze Roll Waxers
1—60" Hot Melt Coaters & Laminators
2—Po-2 Roto Polyethylene Bag Machines.
1—46" Reverse Roll Coater
1—40" and 1—48" Asphalt Laminators
1—30" Double Reverse Roll Coater
1—90" Duplex Hamblet, Layboy and Back Stands
10—Hamblet Sheeters 32", 42", 45", 50", 62", 68", 72", 84", 90" and 104"
1—30" Peters Sheeter, Model UD
1—55 Beck Model C.S.H. sheeter, complete with automatic piler
4—Schultz continuous roll winders. Two—12", One 18" and 1—24"
1—Hayssen Single Package Wrapping Machine Model 84 L.U.
1—Potdevin (Model 111-S) F & S Cello Bag Machine, Electric Eye
1—Potdevin Model 72-C Cellophane satchel bottom bag machine
1—Potdevin Model 296 Duplex Coffee Bag Machine
1—Weber Model "CN" Cellophane Satchel Bottom Bag Machine
1—Simplex Model 4-7 Cellophane Bag Machine
1—Roto Bag Machine Po-5
1—Roto Bag Machine Model PO-2R
DIE PRESSES: 1—Seeley 60" x 14"; 4—Sheridans, 2—37" x 18", one 48" x 31", one 59" x 36", 1—Kidder 38" x 24"
2—Hayssen 4 roll Toilet wrappers
1—Hayssen Model 5-9 Cellophane Wrapper
1—36"-45" and 1—55" Globe sheeters
1—48" Unicraft Embosser A-13

## FOR SALE

**BARKING DRUM**
1—12 ft. diameter x 45 ft. long

**BEATERS**
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54" x 48", cast iron tubs

**CALENDER STACKS**
1—3 roll 84" calender stack.
1—4 roll 72" Calender Stack. (Extra heavy duty).
1—5 roll 82" face.
1—5 roll 86".
1—7 roll, 84" face.

**CHIPPERS**
1—96" Murray 4 knife Chipper—anti-friction bearings.
1—84" 10 knife Carthage Chipper. Anti-friction bearings.
24—Chipper Knives 15⅞ x 8¼, 2 slot.

**CRUSHER & HAMMERMILL**
1—Jeffrey Shredder
1—Murray Chip Crusher.
1—Williams Hammermill

**CYLINDER MOLDS**
2—42" diameter x 106" face
7—36" diameter x 94" face, hollow shafts, Very good condition.
1—30" diameter x 72" face.
1—30" diameter x 92" face.
2—36" diameter x 82" face
2—36" dia. x 54" face.
3—36" diameter x 90" face, 18" diameter couch rolls.
1—60" dia. x 170" face.

**DIGESTERS**
1—Biggs 12' 6". (Globe)
1—10' high x 5' dia. High pressure vertical digester.

**DISINTEGRATOR**
1—Shartle 8" disintegrator (new) with 125 horsepower induction motor. (totally enclosed)

**DRIVES**
1—Rice-Barton hypoid enclosed drive, 4 to 1 ratio.
1—#6 Reeves vertical—anti friction bearings, totally enclosed.
1—Sandy Hill right angle 50 H.P. (4.75 to 1).
1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)
1—5 H.P. Reliance Drive, complete with starting equipment, like new.
1—20 H. P. U. S. Varidrive
1—Agitator drive

**DRYERS**
1—28" diameter x 84" face
2—30" diameter x 40" face with bearings
2—30" diameter x 48" face with bearings.
4—48" dia. x 52" face with frames, gears, bearings
1—36" diameter x 44" face
3—36" diameter x 76" face.
5—36" diameter x 84" face, with gears
1—16" diameter x 54" face (steel)
6—48" diameter x 130" face.
1—48" diameter x 92" face.
2—Cooling Drums, bronze 36" x 128", with frames, gears & necessary rolls to make up the unit. (After dryers)

**EMBOSSING CALENDERS**
1—43" 3-Roll Embossing Calender.
1—62" 2 roll Embosser.

**EXTRACTOR ROLL**
1—Extractor roll, 26" diameter x 104" face

**FILTER**
1—Dorr-Oliver Filter, 3 ft. dia. x 6 ft. face, stainless steel construction, with pump.

**FLAT SCREENS**
1—8 Plate "Packer"
1—12 Plate "Packer"

**FRAMES**
Beloit Heavy Duty Dryer Frames for 100 Dryers (42" Dia.) 4 Stack. Immediate Delivery.

**HOGS**
2—Mitts Merrill Type 15 C.F.

**JORDANS**
1—Noble & Wood Mammoth
1—Noble & Wood Monarch, Type D.

**LABORATORY EQUIPMENT**
1—Bauer-McNett Fibre Classifier
1—16" diameter x 24" Face Dryer
1—Press Roll 6" diameter 24" Face, steam jacketted
1—2' Shartle Hydrapulper
2—8" x 8" Valley Sheet dryers
1—12" x 12" Valley Sheet dryer
1—6" diameter Hydraulic Press
1—Experimental Digester (High Pressure)
1—1½ lb. Valley Beater with motor & drive
1—15 lb. E. D. Jones Beater
3—Jonsson Test Screens
1—8" x 8" Valley Hydraulic Press
1—Clark Softness & Stiffness Tester
1—Williams Tester, with Timer
1—20" Dilts Wet Machine
1—10" Butterworth Padder.
1—Thwing Albert Tensile tester
1—Gurley Densometer Model 4110
1—Chain-O-Matic Balance Scale
1—20" Sprout Waldron Double Disc Refiner, A-F Bearing with motor.

**LAMINATING MACHINES**
2—84" Asphalt laminators.

**MISCELLANEOUS**
1—#1 Miami Selectrap

**MOTORS**
1—200 HP General Electric Synchronous and Starting Equipment (3/60/440, 360 RPM).

**PRESS ROLLS**
2—Chilled iron, chrome plated 9" x 72"
1—Chilled iron, chrome plated 12" x 100"
1—Chilled iron, chrome plated 10" x 74"
8—sets (1 rubber, 1 chrome steel) 74" face x 15" dia., complete with bearings.

**PULPERS**
4—Dyno-Pulpers

**PUMP**
1—Morris-10,000 g.p.m. 25 ft. head (all bronze)

**REELS**
1—86" 2 bowl reel.
1—84" 3 bowl revolving reel.
1—100" Rice Barton 2 bowl Reel, heavy duty.
1—123" 3 bowl Revolving Reel
1—134" 2 drum
1—72" Downingtown Reel, 2 bowl.

**REFINERS**
1—Dilts Classifiner, practically new
1—Rice Barton Dynofiner, details on request.
1—Dilts, #1 Hydrafiner, stainless steel filing, anti-friction bearings, excellent condition, including 125 h.p. motor
1—#4 Shartle Hydrafiner
1—12" Wiener Refiner, with 200 h.p. motor
1—20" Sprout Waldron double disc refiner, A-F bearings with motor

**REGULATOR**
1—Trimbey Consistency Regulator

**ROLLS**
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

**ROTARY SCREENS**
1—#2A-50 Bird, copper vat
2—APMEW Rotary Pulp Screens.

**SAVEALLS**
1—LaMorte, 48" diameter x 82" face cylinder mold.
2—Savealls, cylinder molds, 42" diameter x 106" face, brand new vats.

**SCREEN PLATES**
Bird Rotary screen plates.

**SHEETER**
1—132" Hamblet heavy duty duplex sheeter, anti-friction bearings throughout, including layboy and backstand.
1—84" Hamblet, duplex, back stands.

**SHREDDER**
1—16" "Swift" Paper Shredder

**SLITTERS & WINDERS**
1—32" Cameron Type 28-8-3, shear cut duplex, 30" rewind, constant tension and variable speed motor drive, practically new condition. Will lengthen up to 72" wide.
4—42" Cameron Type 6
1—42" Cameron Type 26-2A
3—50" Cameron Type 6
1—62" Cameron Type 6
1—72" Cameron Type 9
1—84" Cameron Type 12
1—86" Two Drum Moore & White 50" diameter rewind.
1—96" 4 drum Moore & White winder
1—102" Cameron Type 18, 60" diameter
1—122" Cameron Type 18, 60" diameter, anti-friction bearings

**SLITTING DEVICE**
84" Quick change slitting device shear cut, complete, practically new.

**STOCK PUMP**
1—10 x 20 Shartle Triplex

**STRAINER**
1—Elliott Twin Strainer, Type R

**SUCTION COUCH SHELL**
1—Downingtown suction couch shell only, 127½" face x 26" diameter

**SUCTION COUCH ROLL**
1—Beloit, 36" diameter x 246" face, SKF bearings.

**SUCTION FELT ROLLS**
1—Gilbert & Nash 122" face
1—Beloit Rubber Covered Suction Felt Roll 109 face x 20¼" diameter.

**SUCTION PRESS SHELL**
1—14" diameter x 100" drilled face, suction Press Shell only.

**SUPER CALENDER STACK**
1—9 Roll 56"

**TABLE ROLLS**
22—Rubber Covered 10" diameter x 246" face
30—4" dia. x 130" face (will cut to size)

**THICKENERS**
2—Iron End Vats with 36" diameter x 84" face Cylinder Molds and 20" diameter couch rolls, including spare cylinder mold and spare couch roll, all anti friction bearing equipped.

**TOILET WINDERS**
2—72" Hudson-Sharp (Surface type winder)

**TRIMMER**
1—84" Seybold

**VACUUM PUMPS**
1—H-3 Nash Vacuum Pump
3—#1 Nash Hytor vacuum pumps
1—#7 Nash Hytor vacuum pump with 75 h.p. synchronous motor.
2—Connersville, 14 x 20
2—#3 Nash Hytor
1—#4 Nash, with motor
1—L-5 Nash Vacuum Pump (new)
3—L-5 Nash Vacuum Pumps
1—L-6 Nash Vacuum Pump

**VATS**
2—D. J. Murray Co. Vats, iron ends, for 42" x 120" cylinder molds, overflow and counterflow.
2—Brand new Downingtown Iron End Vats, copper lined, for 42" diameter x 112" face cylinder molds. Will cut down to your size.

**VATS AND MOULDS**
5—Stainless Steel Vats, with 36" Dia. x 100" Face Cylinder Moulds, anti-friction bearings, 2 Spare Cylinder Moulds, all in excellent condition.

**VIBRATING SCREENS**
1—Hummer electric Vibrating Screen, stainless steel
1—Selectro 2 stage, 5 ft. x 10 ft.
1—36" x 48" Vibrating Screen
3—Jonsson Model 8 Vibrating Screens

**WOOD SPLITTER**
1—16" Horizontal

**YANKEE DRYER**
1—84" diameter x 56" face
1—12 ft. diameter x 181½" face

**Paddy Ross, Pres.** **J. J. ROSS COMPANY** **Ben Kurs, Treas.**
**377 Frelinghuysen Ave.** **Tel—Bigelow 3-3720** **Newark 12, N. J.**

## SERVICE ENGINEERING

An outstanding and growing supplier to the paper industry has opening in Service Engineering. The successful applicant should have engineering degree; preferably but not necessarily a graduate of papermaking school; at least 5 years papermaking experience; age range 28-40.

Duties involve considerable traveling from eastern headquarters, but usually for no more than 10 days at a time, and include surveying paper machines, observing performance of product, investigating complaints, consultation on paper machine problems.

Rare opportunity. Thorough preliminary training. Interesting and stimulating work with good salary and good future.

Write Box 59-118 c/o Paper Trade Journal.

A-13

## WANTED

Sales Engineer to handle sales program for high velocity dryers. Apply in detail to:

GENERAL MANAGER

**BLACK CLAWSON CO.**

WATERTOWN, N. Y.

A-13

## HEAD OF TRAFFIC DEPARTMENT

We are a large and growing paper manufacturer, located in Northeastern Wisconsin and we have a major volume of shipping. We need a man to take full responsibility for our Traffic Department. The man we need is probably between 30 and 50 years old and is now the head of a small traffic department or an assistant in a large company or one with an aptitude for this type of work. For this man, we offer an excellent starting salary and opportunity for growth and advancement. In addition, we have a group insurance program and an outstanding profit-sharing retirement plan. Apply by letter, giving your complete background. All replies will be held in strict confidence. Write Box 59-123 care Paper Trade Journal.

A-20

## WANTED

TECHNICAL DIRECTOR for pulp and paper company which will build a 500-ton per day average kraft pulp and linerboard mill to be located at Counce, Tennessee on the Tennessee River, with excellent opportunity for future growth and expansion. Among qualifications required are: College degree; 10-20 years of experience from the Southern kraft pulp and paper industry; age between 35-50; imagination and initiative; to act in advisory capacity to local officer in charge of complete operations. Position has excellent opportunities of growth in future. Only well qualified applicants will be considered. Applications will be treated confidential.

**TENNESSEE RIVER PULP & PAPER COMPANY**

230 Park Avenue, New York 17, N. Y.

A-20

## BARGAINS

*IMMEDIATE DELIVERY*

1—128" B & S 10-Roll Calender Stack. King Roll 24" Dia. Heavy box frames, full set of doctors. Excellent Condition.
1—86" Farrel 8-Roll Calender Stack. Anti-friction Bearings. Excellent Condition.
26—36" x 72" Complete Dryer Section. Stack, Drives, Etc.
10—48" x 150" Pusey & Jones Dryers.
1—84" Kamyr Machine, Complete. 75 ton per day output.
1—E. D. Jones Majestic Jordon No. A-482. New S.S. Fillings. Like New.
1—E. D. Jones Imperial Jordon, S.S. Fillings
1—Noble & Wood Mammoth Jr. Jordon, S.S. Fillings
1—Monarch Jordon, Model SP, Serial #21095, no fillings. Direct connected to a 75 H.P. G.E. 400 RPM Motor.
1—No. 3 Jones Pulpmaster, Late Type. Complete Drive.
1—Dilts #1 Hydrafiner, Anti-friction Bearings.
1—45" Seybold-Dayton Trimmer and Cutter with 5 H.P. 220/440 Volt Motor.
1—A.P.P. Rotary Centrifugal Pulp Screen. 40" Dia. x 42" Face. Serial #1274227. Like new. Capable of 40 ton groundwood pulp per day.
1—Trimbey Senior Rotary Screen.
2—Impco Rotary Pulp Screens.
3—No. 3 Impco Rotary Knotter Screens. S.S. Plates.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—Hudson Sharpe Toilet Tissue Converting Machine. Ser. #2123. 8 Spare Mandrel Bars.
1—42" Dia. x 110" Face Pope Type Reel. Excellent Condition.
1—25" Dia. x 156" Face Sandusky Suction Couch, Bearings & Stands.
1—22" Dia. x 138" Perforated Face Sandusky Suction Couch, Bearings & Stands.
1—10-Knife Carthage Chipper with Anti-friction Bearings.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—Dilts 53" Dia. x 60" Face—2000 lb. Iron Tub Beater. S.S. Extractor Type Hood.
1—Seybold Knife Grinder. Size G, 84" Table, Serial #4X802.
1—Sandy Hill Sulphur Burner. Complete.
2—#2 Bird Screens with Copper Vats & S.S. Plates.
1—Tugboat Annie Pulper.
1—Worthington Air Compressor, Model 5TR2, 2-Stage, Air Cooled. 5 H.P.
1—C.P. 12 x 10 Air Compressor, 100# Pressure.
1—I.R. 7 x 7 Air Compressor, 100# Pressure.
1—No. 244 Mattison 18" Core Cutting Saw—5 H.P. 3450 RPM, 3/60/220-440 volt.
1—90 H.P. Terry Turbine, Type G-4000/1000 RPM. For Paper Machine Drive. Complete.
1—No. 2 Jones Pulper. A.F. Bearings. Spare Worm.
1—36" Putman H.D. Lathe—15' Centers.
1—24" x 6' L & S Geared Head, H.D. Machine Lathe. Taper Attachment, Hollow Spindle, Motorized.
1—A.C. 75 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—A.C. 60 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—G.E. 100 H.P. MG Set, 250 Volt D.C.
1—250 H.P. Ingersoll Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.

Save over 50% on your requirements for New Jordon Fillings. S.S., Bronze & Carbon Steel.

Gear Reducers, P.I.V. Drives, Generators, S.S. Pumps, Stock Pumps, Plunger Pumps, Etc.

1000 Electric Motors from ¼ H.P. to 600 H.P. In Stock.

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

*Write—Wire—Phone For Your Needs*

**RUDERMAN MACHINERY EXCHANGE**
GOUVERNEUR, NEW YORK
Telephone 333-334

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# An unusual offering of Quality Machinery

*Here is your opportunity to acquire wanted machinery at great savings!*

*We have just completed the last phase of our current modernization program at Potsdam, N. Y., St. Louis, Mo. and Los Angeles, Calif. Although this equipment no longer fills our needs, it may be just right for you.*

*It is realistically priced for quick sale to offer you rock bottom low cost investment on top quality, economical equipment.*

- **MATADOR BAG MACHINE, MODEL 26.** Makes a bag from 3" to 18" in length and from 2"to 10¼"in width. Fully equipped with drive, but no printer. Excellent condition.
- **50 INCH HUDSON SHARP EMBOSSER-TINTER.** Fully equipped with unwind, rewind, one embossing pattern and 10 h. p. motor drive. Perfect condition, never used after complete rebuilding by Hudson Sharp. **SOLD.**
- **65 INCH CAMERON SLITTER, MODEL 10.** With drive, foot control and hand brake. Some accessory equipment. Condition: fair. **SOLD.**
- **32 INCH RUF REWINDER.** For manufacturing small length rolls 5 to 15 feet in length on 1½" I. D. core. ¾ h. p. motor drive. Condition: good.
- **42 INCH REVERSE ROLL COATER.** Completely equipped with infra-red drying system, rewind, unwind, and all electrical controls. Speed from 30 feet to 300 feet per minute. Condition: excellent.
- **52 INCH PARRY LINER.** Equipped with 5 h. p. motor drive, Reeves transmission, as well as rewinder. Condition: excellent.
- **60 INCH HOLYOKE MACHINE COMPANY SUPERCALENDER.** 9 roll supercalender stack, pneumatic loading cylinders, Foxboro controller, 100 h. p. motor drive. Condition: good.
- **ONE COLOR 49 INCH ROTOGRAVURE PRINTING PRESS.** Roll to roll gravure Printcote machine equipped with unwind, rewind and steam heated drying rolls. Some accessory equipment. 7½ h. p. motor drive. Condition: good.
- **ONE COLOR 54 INCH ROTOGRAVURE PRINTING PRESS.** Printcote roll to roll gravure press equipped with unwind, rewind, forced hot air drying system, accessory equipment, and 7½ h. p. motor drive. Condition: good.
- **POTDEVIN SERRATED EDGE BAG MACHINE, MODEL 248.** Recently rebuilt, manufactures bags from 2" to 6¼" in length and from 1½" to 4" in width. Included are 9 formers, tail printer, other accessory equipment. Condition: fair.
- **THREE COLOR 52 INCH KIDDER FLEXOGRAPHIC PRESS.** Equipped with 3 printing stations, and fourth can be added. Operates at high speed. Equipped with unwind, rewind, hot air drying system and accessory equipment. Condition: excellent. **SOLD.**

SAINT LOUIS · POTSDAM · TREE TO TRADE · LOS ANGELES · ORCHARD PAPER COMPANY

Write or telephone today, H. Deeken

**ORCHARD PAPER COMPANY**
**3914 North Union, St. Louis 15, Mo.**
**Phone: EVergreen 5-8400**

**GIBBS-BROWER COMPANY, Inc.**
**10 Depot Plaza, White Plains, N. Y.**
**Phone: ROckwell 1-1130**

N.C.

# FOR SALE

**DRYERS (Yankee)**

1—12 ft. Beloit x 181", new 1952, ASME tested for 125 lbs.
2—Beloit 12 ft. x 130", Messinger bearings

**DRYERS**

***60" diameter***

38—202" face with frames, gears, bearings
26—175" face
5—164" face Rice Barton with bearings
1—154" face Black & Clawson, 100 lb. pressure
2— 98" face Hudson Sharp creping, with bearings

***48" diameter***

1—178" Ptg 125 lb. ASME
9—152" Rice Barton
2—150" Rice Barton
10—146" Pusey & Jones
4—146" Pusey & Jones
4—144" Pusey & Jones
2—136" Beloit with bearings, rope sheave
8—134" Pusey & Jones, for anti friction bearings Felt
13—134" Black & Clawson, stamped sixty lb.
16—132" Pusey & Jones, paper
1—132" Horne with brgs.
19—130" Downingtown
1—124" Rice Barton
1—116" Bagley & Sewall
2—114" Pusey & Jones
5—108" Sandy Hill with bearings
1— 89" Rice Barton
1— 88" Pusey & Jones
1— 78"
2—66½" Rice Barton, cast iron ends, copper face
2— 56"
2— 48"
40— 46" Black & Clawson seamless

***42" diameter***

4—140" Beloit
1—134" Black & Clawson, sixty lbs.
1—130" Downingtown
3— 73"

***40" diameter***

5—76" with gears, bearings

***36" diameter***

2—136" Horne for anti friction bearings
8—114" Rice Barton
12—108" Rice Barton
3— 94" Rice Barton
70—Moore & White 84" frames, gears, bearings
4— 82"
10— 76"
4— 72"
4— 64"
34—56"-62" with frames, gears, bearings
2—48"
15—46"
9—40" with frames, gears, bearings

***30" diameter***

1—88" Horne with anti friction bearings

***28" diameter***

1—96"
7—76"

***24" diameter***

1—130" Pusey & Jones
1—110"
1—108" Beloit
2— 98"
2— 96"
1— 49"

***22" diameter***

1—89"
2—88" Rice Barton anti friction bearings

***20" diameter***

1—74"
1—40"

***18" diameter***

1—94"
1—77"
1—62" Pusey & Jones

***16" diameter***

2—46" B & C with brgs.

**JORDAN**

#1 Emerson anti friction with 3/16" bronze
Junior #4 Emerson anti friction, ½" steel
#3 Unifiner, new 1951
2—Jones standard, anti friction, new 1948, ¼" S.S.
2—#1 Jones high speed with base and coupling
1—Jolly Pony Jordan, ¼" S.S.
2—Jones Imperial
3—No. 2 Dillon, one rebuilt
1—Horne Pony Jordan ¼" Shartle bar type filling with 440 volt 100 HP motor
#2 Appleton
#1 Emerson
2—Noble & Wood Mammoth type D
1—Jones Majestic
#2—Emerson, anti friction, ⅜" bronze

**EMBOSSER**

Hudson Sharp, new 1941, 3 sets of rolls, air clutch, 2 drum winder, unwind stand

**FRANK H. DAVIS COMPANY, INC.,**
P. O. BOX 231, CAMBRIDGE 39, MASSACHUSETTS

A-13

## Help Wanted

**REQUIRED, immediately:**

### GROUNDWOOD FOREMEN

***. . . for new newsprint mill in Pakistan under direction of Sandwell International, Ltd. Vancouver. Start-up is scheduled for early this summer.***

***THREE foremen are required; contract will be for about 2 years or less. Tax concessions, travelling and living expenses, plus other special fringe benefits make these openings unusually attractive. Foremen recently retired, still in good health, and interested in "a trip around the world," are particularly invited to explore this opportunity.***

***G. HAROLD FISK, P.Eng.,***
***Consultant***

**Dominion Square Building, MONTREAL**

A-13

### PULP SALESMAN

Technical education or experience preferred. Unusual opportunity for industrious young man. Resume in strict confidence. Address Box 59-129 care Paper Trade Journal.

A-13

### PLANT MANAGER

Complete responsibility for operation of branch plant, located North-Central states. Paper operation affiliated with large consumer goods manufacturer, home offices in Mid-Atlantic states.

Proven leadership ability. Minimum ten years process (paper preferable) experience—five in direct supervision. Degree in Mechanical or Chemical Engineering or Chemistry.

Send detailed resume to Box 59-124 care Paper Trade Journal. A-20

### BOARD MILL MANAGER

Heavy experience with paperboard cylinder machines, proven ability as an Executive capable of developing a production team. Rare opportunity for position with well established firm. Salary open, bonus, excellent benefits. Replies will be held confidential. Send resume including salary requirements to J-46, P. O. Box 2065, Phila. 3, Pa. A-27

## Help Wanted

### PAPER CONVERTING MACHINERY DESIGNER

**Wanted by manufacturer of paper and film bag machinery and printing presses.**

**Located in pleasant New Jersey community.**

**Degree not necessary—only the ability and practical background for independent design of converting machinery.**

**Excellent opportunity for capable man. Salary open.**

**Please send resume of experience. Box 58-13 care Paper Trade Journal.**

TF

### EXPERIENCED COATING AND COLOR MAN

Technical background for a bleached Kraft food board mill.
Excellent opportunities, salary and benefits.
Please send resume including education, experience and salary requirements.

***Write Personnel Manager,***
**AMERICAN BOX BOARD CO.**
**Filer City, Michigan** A-13

### COATING SPECIALIST

Graduate Chemist or Chemical Engineer with experience in preparation, formulation and use of coatings for food board and carton grades is required by our Technical Division. Send resume of experience to

**Employment Manager**
**Camp Division**
**Union Bag-Camp Paper Corporation**
**Franklin, Virginia** A-13

### WANTED

Chemical Engineer or Chemist with fine paper laboratory or manufacturing experience for customer technical service in the paper printing and converting fields by a large paper manufacturer located in Ontario. Position involves considerable travelling. Bilingual (English and French) desirable. In replying give full particulars regarding education, experience, marital status, etc., with recent photograph.

Please write Box 59-121, Paper Trade Journal. A-13

### WANTED

1—Mechanical Engineer.
1—Electrical Engineer.
Paper Mill experience desired.
Excellent opportunity and benefits.
Salary negotiable depending on experience.
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Adell Chemical Co. ..... —
Albany Felt Co. ..... 19
Allis, Louis Co. ..... —
Allis-Chalmers Mfg. Co. ..... —
Aluminum Co. of America ..... —
American Bitumuls & Asphalt Co. ..... —
American Cyanamid Co., Paper Chemical Dept. ..... —
American Cyanamid Co., Dyes Dept. ..... —
American Cyanamid Co., Organic Chem. Div. ..... —
American Cyanamid Co., Pigments Dept. ..... —
American Paper & Pulp Co. Inc. ..... —
American Potash & Chem. Corp. ..... 18
American Steel & Wire Co. .. —
Anglo Paper Products Ltd. .. —
Annin Company ..... —
Antara Chemicals, Sales Div. Gen. Aniline & Film Corp. .. —
Apmew, Inc. ..... —
Appleton Machine Co. ..... 15
Appleton Wire Works ..... —
Appleton Wood Products Co. .... —
Armco Drainage & Metal Prod. Co. ..... 67
Armco Steel Corp. ..... —
Armstrong Machine Works .. —
Asten-Hill Mfg. Co. ..... —
Aurora Pump Div., N. Y. Air Brake Co. ..... —

Babcock & Wilcox Co. ..... —
Bahr Brothers Mfg. Co. ..... —
Bailey Meter Co. ..... 67
Bauer Bros. Co. ..... 62
Becco Chem. Div., Food Machy. Corp. ..... 17
Beloit Iron Works Co. ..... —
Bird Machine Co. ..... 29
Bixby, R. W., Inc. ..... —
Black-Clawson Co. ..... 66
Bolton & Sons ..... 3
Borden Co. ..... —
Bowsher Co., N. P. ..... —
Brandon Sales, Inc. ..... —
Broughton, A. E. & Co. ..... —
Brown Company ..... —
Buckeye Cellulose Corp. ..... 63
Buffalo Forge Co. ..... —
Buffalo Pumps, Inc. ..... —
Butterworth, H. W., & Sons Co .. ..... —

Cady, E. J., & Co. ..... —
Cambridge Instrument Co. .... —
Cameron Machine Co. ..... —
Capitol Products Corp., Read Standard Div. ..... —
Carthage Machine Co. ..... —
Central National Corp. ..... —
Central Soya Co. ..... 37
Chain Belt Co. ..... —
Ciba Company ..... —
Cities Service Oil Co. ..... —
Clark-Aiken Company ..... —
Classified Advertising ..... 68
Clearing House ..... 68
Cleveland Crane & Engrg. Co. —
Columbia-Geneva Steel Div., U. S. Steel Corp. ..... —
Columbia-Southern Chem. Corp. Sub. of Pittsburgh Plate Glass Co. ..... 13
Combustion Engrg. Co. ....10 & 11
Convey air Sales Ltd. ..... —
Corn Products Sales Co. ..... 20
Crane Co. ..... —
Curtiss-Wright Corp. ..... —

Davis, Frank H., Co., Inc. .... 71
DeZurik Corporation ..... —
Dewey & Almy Chem. Co. .... —
Diamond Alkali Co. ..... 58
Dicalite Div., Great Lakes Carbon Corp. ..... —
Dierks Paper Co. ..... —
Dilts Machine Works ..... 66
Dodge Mfg. Co. ..... —
Dorr-Oliver ..... —
Dow Chemical Co. ..... —
Dowell ..... —
Draper Bros. Co. ..... —
Dryden Paper Co., Ltd. ..... —
du Pont, E. I., de Nemours & Co., Dyestuffs Dept. ..... —
du Pont, E. I., de Nemours & Co., Electrochemical Dept. .. —
du Pont, E. I., de Nemours & Co., Grasselli Dept. ..... —
du Pont, E. I., de Nemours & Co. Pigments Dept. ....Cover 3

Eaton Manufacturing Co. .... —
Ebasco Services, Inc. ..... —
Economy Equipt. Co. ..... —
Egan Frank W., & Co. ..... —
Electric Mchy. & Mfg. Co. .. —
Elixman Paper Core Co. ..... —
Export Supplement ..... —
Elwell-Parker Elec. Co. ..... —
English China Clays Sales Corp. ..... —
Extremultus, Inc. ..... —

FabriValve Company ..... —
Fairbanks Morse & Co. ..... —
Falk Corporation ..... —
Farrel-Birmingham Co., Inc... —
Fibrecast Company ..... —
Fife Manufacturing Co. ..... —
Fisher Governor Co. ..... —
Fitchburg Screen Plate Co. ..... —
Foxboro Co. ..... —
Fraser Companies, Ltd ..... —
Frederick Iron & Steel Co. .... —

Garlock Packing Co. ..... —
Gaspesia Sulphite Co. Ltd. .. —
Gates Rubber Company ..... —
Geigy Chemicals Corp., Geigy Dyestuffs Div. ..... —
General Dyestuffs Co. ..... —
General Tire & Rubber Co. .... —
Gibbs-Brower Co. .....68 & 71
Gilbert & Nash Co. ..... —
Glidden Company ..... —
Goodyear International Corp. .... —
Goodyear Tire & Rubber Co. Cover 4
Gottesman & Co. ..... —
Goulds Pumps ..... —
Grace, W. R., & Co., Dewey & Almy Chem. Div. ..... —
Graton & Knight Co. ..... —
Graver Tank & Mfg. Co. ..... —
Grinnell Co., The ..... —
Gruendler Crusher & Pulv. Co. —
Gulf Oil Corporation ..... —
Gurley W. & L. E. ..... —

Hamblet Machine Co. ..... —
Harbison-Walker Refractories.. —
Harris-Seybold Co. ..... —
Heimbach, Thomas J. ..... —
Hendrick Mfg. Co. ..... —
Hercules Powder Co. ..... —
Hills-McCanna Co. ..... —
Hooker Chemical Corp. ..... —
Huber, J. M. Corp. ..... —
Hudson Sharp Machine Co. .... 21
Hungerford & Terry, Inc. .... 65
Hunt, Rodney ..... —
Huyck, F. C. & Sons ..... —

Improved Machinery, Inc. .... —
Ingersoll-Rand Co. ..... 31

Jagenberg Werke ..... —
Jenkins Brothers ..... —
Johns-Manville Corp. ..... —
Johnson Corp., The ..... —
Johnson, Alvin H., Co. ..... 62
Jones, E. D., Corp. ..... —
Jones & Laughlin Steel Corp. —

Kalamazoo Tank & Silo Co. .... —
Kidder Press Co. ..... —
Kinney Engineers Inc. ..... —
Knox Woolen Co. ..... —
Koppers Company ..... —

Langston, Samuel M., Co. .... 16
Lawson Company ..... —
Link Belt Co. ..... —
Lockport Felt Co. ..... 57
Lockwood Greene Engineers ... 64
Lodding Engineering Co. ..... 38
Lukon, Inc. ..... —
Lunkenheimer Co. ..... —
Lyddon & Co. ..... —

Magnus Metal Corp. ..... —
Main, Charles T., Inc. ..... 64
Manchester Machine Co. ..... 9
Marathon—A division of American Can ..... —
Marathon Electric Mfg. Corp. —
Mead Pulp Sales, Inc. ..... —
Merrick Scale Co. ..... —
Metalsalts Corp. .....54 & 55
Minneapolis-Honeywell ..... —
Mixing Equipment Co. ..... —
Monsanto Chemical Co. ..... —
Montaque Mich. Co. ..... —
Moore & White Co. ..... 65
Morden Machines Co. ..... 12
Mt. Vernon Mills Inc. ..... —
Murray, D. J., Mfg. Co. ..... —

Nash Engineering Co. ..... 56
National Aluminate Corp. .... 33
National Lead Co., Magnus Metal Div. ..... —
National Starch Products, Inc. —
National Tube Div., U. S. Steel Inc. ..... —
New Jersey Zinc Co. ..... —
Nichols Eng. & Research Corp. ..... —
Noble & Wood Mch. Co. .... —
Nopco Chemical Co. ..... —
Norgren, C. A., Co. ..... —
Northeastern Paper Sales ..... —
Northwest Paper Co. ..... —
Norton Co. ..... —

Oakite Products Inc. ..... —
Ohio Injector Co. ..... —
Ohio Mathieson Chem. Corp. .. —
Osborne Paper Mill Equip. Corp. 73

Paper Conv. Mch. Co. ..... —
Parsons & Whittemore ..... —
Patton Mfg. Co. .....Front Cover
Penick & Ford ..... —
Penn. Ind. Chem. Corp. ..... —
Pennsalt Chem. Corp. ..... —
Perkins, B. F., & Sons, Inc. .. —
Perkins Goodwin Co. ..... —
Personnel Service Associates . 68
Permutit Co., Div. of Pfaudler Permutit Inc. ..... —
Pioneer Paper Stock Co. ..... —
Potdevin Machine Co. ..... 66
Powell Valves ..... 7
Price & Pierce, Ltd. ..... —
Pusey & Jones Corp. ..... —

Railway Supply & Mfg. Co. .. —
Raymond, Chas. P. Service, Inc. ..... —
Read Standard Div. of Capitol Products Corp. ..... —
Ready Power Co. ..... —
Record Fdy. & Mch. Co. ..... —
Red Ray Mfg. Co. ..... —
Rhoads, J. E., Sons Co. ..... 61
Rice Barton Corp. ..... 24
Riedel, Gus & Son ..... —
Riegel Paper Corp. ..... —
Rohm & Haas Co. ..... —
Ronningen-Petter Co. ..... 66
Roosevelt Paper Co. ..... —
Roots-Connersville Blower Div., Dresser Industries ..... —
Ross, J. J., Co. ..... 69
Ross, J. O., Engrg. Co. ..... —
Ross Midwest Fulton Corp. .... —
Ross Paper Machinery Co. ..... 73
Ruderman Machinery Exchange .....70 & 73
Rust Engineering Co. ..... 64
Rust Industrial Co. ..... —
Ryerson, Jos. T., & Son ..... —

Sandoz, Inc. ..... —
Sandy Hill Iron & Brass Works —
Scapa Dyers Inc. ..... —
Seaboard Air Line R. R. Co... —
Shartle Div., Black-Clawson Co. 66
Shawinigan Resins Corp. ..... —
Sheffeld Corp. ..... —
Shell Chemical Corp. ..... 2
Shuler & Benninghofen ..... —
Shy, C. D., & Company ..... 64
Signode Steel Strapping Co ..... —
Sinclair Company ..... —
Sirrine, J. E., Co. ..... —
Smidth, F. L., & Co. ..... —
Socony Mobil Oil Co. ..... —
Sonoco Products Co. ..... 8
Southworth Machine Co. ..... —
Spraying Systems Co. ..... —
Sprout Waldron & Co. ..... —
Stadler Hurter & Co. ..... —
Staley Mfg. Company ..... —
Stanley Steel Strapping ..... —
Stebbins Engrg., Co. ..... —
Stephens-Adamson Mfg. Co. ... —
Stein, Hall & Co. ..... —
Stone & Webster Engrg. Corp. —
Stowe-Woodward, Inc. ..... 22
St. Regis Paper Co. ..... —
Sunday, George M., Assoc. .... 68
Swenson Evaporator Co. .... —

Taylor Instrument Co.'s ...44 & 45
Taylor Stiles & Co. ..... 65
Taylor Wharton Iron & Steel Co. ..... —
TeJax Engrg. Corp. ..... —
Tennessee Coal & Iron Co. .... —
Tennessee Corp. ..... —
Testing Machines ..... —
Texas Co. ..... 4
Texas Gulf Sulphur Co. ..... 59
Thermal Equipt. Grp. ..... —
Thiele Kaolin Co. ..... —
Thomas Paper Stock Co. ..... 67
Thurso Pulp & Paper Co. ..... —
Titanium Pigment Corp. ..... —
Torrington Co. ..... —
Towmotor Corp. ..... —
Turner Halsey Co. ..... —

United Engrg. & Fdy. Co. .... —
United Paper Mchy. Corp. ... —
U. S. Industrial Chem. Co. Div. of National Distillers & Chem. Corp. ..... 53
United States Steel Export .. —
United States Steel Supply Co. ..... —
U. S. Steel Corp. ..... —

Valley Iron Works ..... 14
Vanderbilt R. T., Co. ..... —
Virginia Smelting Co. ..... —
Voith, J. M., G. m. b. h. ..... —

Waldron, John Corp. ..... —
Waldorf Electronics Co. ..... —
Walworth Co. ..... —
Weber, H. G., Company ..... —
West End Chemical Div., Stauffer Chem. Co. ..... —
Westvaco Chlor-Alkali Div., Food Mchy. & Chem. Corp. —
West Virginia Pulp & Paper Co. ..... 66
Weyerhaeuser Timber Co. .. —
Whiting Corp. ..... —
Williams Apparatus Co. ..... —
Williams-Gray Co. ..... —
Woodpulp, Inc. ..... —
Wood's, T. B., Sons Inc. ..... —
Wyandotte Chem. Corp. ..... 6
Wyatt Metal & Boiler Works —

Yarnall-Waring Co. ..... —


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